DOCUMENT RESUME

ED 042 038 VT 011 515

AUTHOR	Frederick, Molly, Ed.
TITLE	Readings in Health and Medical Technology Education Programs. Vision 1.
INSTITUTION	American Association of Junior Colleges, Washington, D.C. Occupational Education Project.
SPONS AGENCY	Kellog (W.K.) Foundation, Battle Creek, Mich.
PUB DATE	70
NOTE	52p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$2.70
DESCRIPTORS	Associate Degrees, *Curriculum Development, *Health Occupations, *Health Occupations Education, Junior Colleges, Manpower Needs, *Program Planning, *Resource Materials

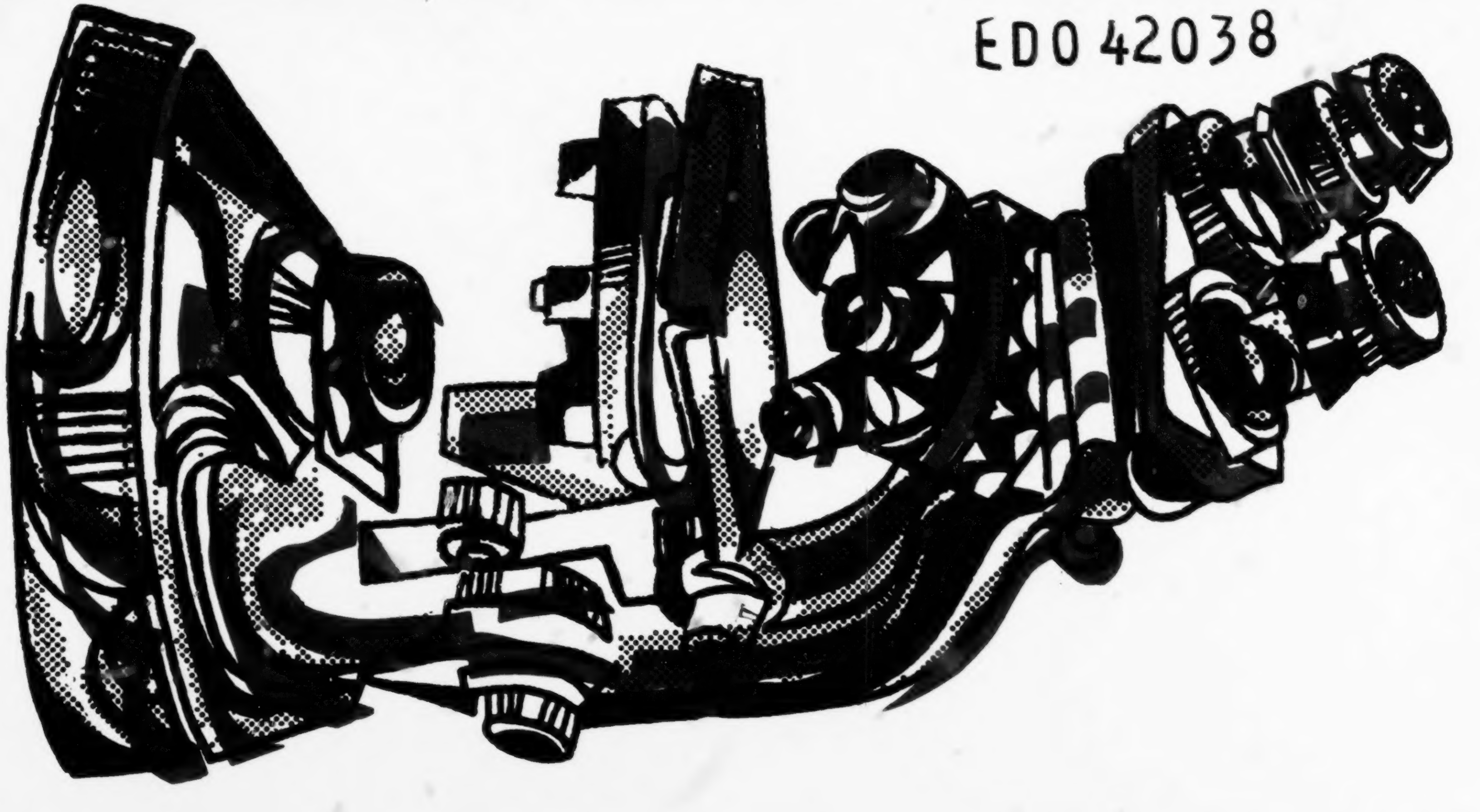
ABSTRACT

This foundation-supported publication will be of special interest to those planning associate degree programs in health education. The articles represent published and unpublished papers and are divided according to general orientation to allied medical and health technologies, and information on specific careers open to students. Topics covered in the 12 articles include: (1) Building a New Allied Health Curriculum, (2) Master Plan for Meeting Community Allied Health Needs, (3) The Role of Junior Colleges in Educational Programs in Radiologic Technology, and (4) A Profile of Accredited Associate Degree Nursing Programs. Another document in this series is available as VT 011 516. (JS)

VT011515

health and medical technology

ED 042038



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VISION: Readings in Health and Medical Technology Education Programs

ED042038

Edited by Molly Frederick

A W.K. Kellogg Foundation-Supported Publication

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One Dupont Circle, N.W.
Washington, D.C. 20036

Printed in U.S.A.

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Editor's Note:

The articles collected in this booklet represent published and unpublished papers. They are presented together for the first time, divided into (1) general orientation to allied medical and health technologies, and (2) articles about several specific careers open to the student. This publication begins a series of six or eight publications.

The articles are timely although some were written a year or two ago. The reader should use the readings for background and stimulation of ideas. Some technologies may change radically in coming years, but one thing is certain: Health problems will always be with us. The human animal is subject to disease, malnutrition, and physical neglect. There have never been and probably never will be enough doctors and dentists to go around. The technician, then, has an invaluable contribution to make. The educator of the technician must make just as great a contribution – by preparing appropriate and adequate training, by knowing the limit and reach of two-year college training, and by being comfortably informed in the allied medical technology field. This publication, and the series to come, are dedicated to the last of these goals. – Molly M. Frederick

Education for Health Technicians: An Overview*

The following report is intended to provide an initial, brief introduction to an emerging and significant educational problem. To help the reader relate the technical level of preparation of health service personnel (professionals, technicians, and practical aides), the following chart has been prepared. Health service technicians, indicated by underlined examples, are normally prepared for entry into their occupations by pursuing a post-secondary educational program that does not demand the completion of requirements for a four-year baccalaureate degree but usually includes a combination of theory, practical knowledge, manual skill, and, when appropriate, actual clinical practice.

Many educational leaders throughout the country seem to be aware of the critical shortages of adequately prepared technical personnel in the health field. In response to this awareness, there are surprisingly widespread but often uncoordinated efforts to develop education to alleviate these shortages. The plans and the programs range from poorly advised, to moderately helpful, to inspired. Junior-community colleges, technical institutes, hospitals, professional schools, vocational centers, proprietary schools, federal, state, and local government agencies, and professional organizations are all involved. New federal legislation will have great influence on future developments in this field.

Voluntary accrediting bodies and registries, often working through professional societies, have provided leadership in many instances. However, in other cases, their assistance has not been solicited, their guidelines have been ignored, and their conditions for approval have been judged unrealistic and inappropriate. The degree to which the professional associations have been able to appropriately modify their requirements as a number of educational programs for technicians have moved from hospital control to college control has frequently determined how great an influence they have been able to maintain.

There are numerous regulatory bodies, both official and voluntary, that are struggling to assure orderly development of education programs. However, in the face of acute shortages and pressures for crash programs, their efforts are sometimes less than successful. By virtue of their legal powers, state licensing bodies are the most influential, but licensing requirements vary greatly from state to state, and many fields are not covered by licensure.

It is not within the scope of this report to judge the value of leadership or lack of it being provided by each of the societies and agencies that have set up standards for the health technologies. However, educational institutions should be aware that standards have been formulated for many educational programs for medical and dental auxiliary personnel. There is no single group that can hope to coordinate the growth of educational programs for health technicians. However, many associations could help to provide some degree of uniformity and quality for programs developed in two-year colleges. For example, these associations could publish periodically a roster of representative health career programs that might serve as models. A clearinghouse for information and, if possible, for consultation also would do much to assure creation of sound programs. If such a service were available, colleges planning to establish new programs would at least be spared the necessity of rediscovering in each instance what standards and regulations have already been developed; what has been tried and what has failed; and what has proven successful. It would not relieve the colleges of the task of developing their own programs to fit their unique situations, but it would help avoid costly mistakes and unnecessary friction with approving agencies.

The great bulk of workers are needed in our hospitals and nursing homes, but, to the dismay of hospitals competing

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**Selection from the booklet by the same title by Robert E. Kinsinger, Program Director, W.K. Kellogg Foundation, Battle Creek, Michigan. Published in 1965 by AAJC.*

for their services, the same skills are needed in public health departments, social welfare agencies, private medical and dental offices, and even in industry. The need in terms of numbers is disconcerting, but complicating the matter further are elusive facts in relation to the kinds of service these technicians will be called upon to perform and the educational background they will require. In 1960, a committee of the American Medical Association identified over fifty allied medical occupations. At that time the committee estimated that there were already some eight individuals in allied health activities for each physician engaged in patient care. An even greater number and more diverse groupings were predicted for the future.

A vast number of technical workers are currently needed to provide new health services which are a direct outgrowth of recent scientific advances. For example, radioisotope technicians and biomedical electronics technicians are needed to service, maintain, and operate the growing list of machines used in conjunction with medical care and for scientific research. In other cases, shifting medical service and social patterns have created new demands for trained technical personnel. A dramatic example of such a shift is the "ambulance problem." It is true that not all of the difficulty is due to the lack of prepared personnel. Poorly equipped ambulances, inadequate rules governing their operations, as well as inadequately trained or nonexistent attendants are to blame. Only a fraction of a nationwide sample of cities and towns require attendants to accompany ambulance drivers.

Dr. Oscar P. Hampton, speaking before the American College of Surgeons, suggested that, "casualties on the streets should get as good treatment as those on the battlefield." The fact is that thousands of victims do not get this care.

Is not the increasing demand for more and different types of health workers the direct responsibility of health agencies?

Hospitals have assumed a traditional three-part service function: *patient care, research,* and *education. However, the rising costs of the educational function have recently become* of increasing concern to hospitals. The rising costs of nursing and other allied medical education to the hospital, and thus to the patient, is only one complication of hospital-sponsored programs. The hospital, primarily a service institution, almost inevitably faces a conflict between service and education. Even graduate medical education, which depends on hospitals for further educating those holding internships and residencies, faces problems of differentiating clearly between service and education.

This same dilemma and a reluctance to forego service in the interest of education often impedes educational progress in relation to nursing, medical record technology, x-ray technology, and other fields traditionally offered by hospital schools. The procurement of instructors has also become a problem for the hospital. The clear-cut emphasis of the college on educational objectives to the exclusion of conflicting needs for patient service, the academic ethos of the college, and the prestige of faculty appointment have tended to draw more and more of the scarce number of instructors from the hospitals to the college campuses. There has been, in addition, a preference for working closely with faculty members in other disciplines and with resources more readily available in a multipurpose college than in a single-purpose school. The growing number of high school graduates who are going to college has also tended to shift students from hospital-centered to college-centered programs.

If the number and size of hospital schools for health technologies is static or in some cases declining and the need for more and different types of graduates continues to increase drastically, there should be supplemental programs. There are, or, more exactly, there can be. The junior-community colleges and technical institutes are currently preparing for this challenge. The evidence can be seen all across the land.

Out of a pioneer national research project, using the two-year college as a base and nearby hospitals and other health agencies as practice laboratories, grew the rapidly developing associate degree nursing program.

These programs, in general, adhere to the following guidelines: (a) students are treated as regular college students—with a major in nursing; (b) nursing students take all but nursing classes with other college students (*applications* of principles taught in regular biological and physical science and humanities courses are taught by the college nursing instructors in the classroom and at the patient's bedside); (c) college nursing instructors select appropriate clinical practice for students at nearby hospitals and other clinical facilities that have agreed to permit college nursing instructors and students to use the patient service areas as part of the college's extended campus; and (d) the program prepares the student at the time of graduation to take the state licensing examination for registered nurse (RN) and for a beginning position as a staff nurse giving direct care to patients.

There are pressures throughout the United States working at cross purposes to a program for the sound development of education for the health technologies. Rapidly expanding health facilities and increasing demands for health services have placed a strain on hospitals and other health agencies. Institutions, physicians, and dentists must find assistance quickly to meet the mounting needs of the public. Hastily conceived on-the-job training programs are often the result. Sometimes based on the assumption that anyone on the job is better than no help at all, short-term training programs are instigated for unskilled and therefore unemployed individuals who frequently have low scholastic aptitude. Graduates of such training programs, admittedly stimulated by praiseworthy motives, often offer their services to health agencies after acquiring only limited skills and knowledge. Under the pressures of personnel shortages, these individuals are sometimes required to provide services to patients far beyond their ability. Such an approach is perhaps more defensible in trade and industry where the principle of *caveat emptor* is operative. However, the ill and otherwise handicapped are least able to defend themselves from inept service.

Short-term, quickly developed training programs are by no means the only threat to safe patient services. The same pressure for technical health personnel are at work on two-year colleges. Crash programs undertaken to alleviate critical shortages suffer to varying degrees from a series of planning errors or omissions. Once an inadequately planned educational program has been inaugurated prematurely, it is much more difficult to modify than it would have been in the planning stages. Health technology programs developed under forced draft usually suffer from some or all of the following planning defects:

1. There has been an inadequate discussion with potential employers, institutional managers, and professional practitioners regarding the nature of employment that will be available to graduates, and the kind of skill and knowledge they should bring to a beginning position.

2. Plans for use of clinical facilities and other learning facilities outside the jurisdiction of the college are loosely formulated, not based on written contracts, and subject to frequent breakdowns because of lack of clear-cut plans, or personnel changes at the hospital or college.

3. The curriculum has not been built on adequate study of already existing programs, expert consultation, consideration of available criteria formulated by professional societies, boards of registry and licensing bodies, but, rather, depends on untried hypotheses and trial-and-error adjustments.

4. There is no sharp distinction regarding educational responsibility for the entire curriculum making it possible for the quality of the educational program to fall in a gray zone of shared responsibility between the college faculty and the staff of the clinical facility.

5. The "internship" concept is misused as a postgraduate work experience to fill gaps in the basic program or to provide indentured and inexpensive labor for a service facility.

6. Educational blocks of theory and of practice are completely separated due to lack of time to plan.

7. Faculty without adequate background in the subject to be taught, or familiarity with the organization and conduct of collegiate education are employed on the assumption that they can learn on the job.

8. Library resources, college laboratory facilities, audio-visual materials, reading lists, syllabi, and other tools of education are inadequately provided.

9. Hastily recruited students are afforded little counseling regarding the nature of the field they hope to enter or the attitudes or academic rigor that will be required of them.

To alleviate public pressure for educational programs in the health fields, colleges may sometimes establish programs in name only. A series of courses in the sciences and humanities fundamental to the health field are offered together with one or two introductory survey courses relative to the technology. The program is then mislabeled a curriculum for technicians. Actual instruction in the skills and knowledge of the technology is provided following the completion of college classes (during what is sometimes euphemistically termed a practicum) under the jurisdiction of a hospital or other clinical facility.

Another expedient, often the product of pressures brought about by manpower shortages, is the narrowly conceived collegiate program which trains only for a limited range of skills. The curriculum provides no theoretical base, little of the "why" of the technician's job, no general education to help the graduate adapt to his changing role in a particularly fluid vocational setting. The need for skills training programs in contrast to broader educational programs may be justified in isolated instances by severe time restrictions, but it penalizes and sharply limits the continuing usefulness of the graduate. It is a less than satisfactory approach to providing long-term solutions to personnel shortages in the health fields. Fortunately, however, foundations, professional associations, and federal agencies have taken some encouraging initial steps to counteract these problems.

A limited number of foundation grants have been offered to community colleges to enable them to employ faculty six months to a year before students are admitted to a new program, thus assuring adequate planning. A few teacher-training programs for instructors of health technologies have been partially underwritten. Some workshops and short-term training grants, both pre-service and in-service, for potential or actual college teachers of health technologies, have been supported by foundation grants and governmental subventions. A long-term study and action program for community college health careers is being supported in one state. A beginning has been made toward organized assistance for colleges. However, mounting demands for crash programs will continue to challenge educators to resist expediency in favor of quality.

The planning and operation of college-based technical programs in the health fields pose unique problems. In most cases the laboratory, so essential to the educational process, is not under the control of the college. Clinical practice for students is subject to the approval of a separate institution or a professional practitioner primarily concerned with patient service rather than education. The pitfalls and nuances of this necessary relationship are many and worthy of an entire treatise. However, the mutual interest of all parties in securing large numbers of quality graduates has usually overcome the conflicts that may occur. The hospital or medical practitioner cannot permit the presence of students to upset the service routine too severely or to have the quality of service impaired. The college, on the other hand, cannot have its curriculum so badly distorted by service needs that essential learning experiences are not available or are available at the wrong time. The problem is difficult but it has been overcome again and again. If there is one key to the resolution of this problem it is a *written* contract and a code of relationships, procedures, and responsibilities of the two parties to the contract.

The problem of faculty procurement, an old story in all fields of education, has a few additional facets in the field of auxiliary dental and allied medical education.

There is a much larger proportion of women engaged in the health technologies than men. It is from this pool of womanpower that most recruits must be drawn and prepared as instructors. The Bureau of the Census tells us that most adult women are wives, and that most wives are mothers and/or homemakers. This sometimes adds to a teacher shortage. Also, the technician's knowledge of what and how to teach may be limited because she may have learned her skills by apprenticeship. Programs for identifying outstanding technicians and preparing them as instructors must have high priority in any plan for meeting the challenge for technicians in the health field.

Much has been written about the potential for better teaching and utilization of instructional talent through television, and education in the health field is uniquely suited to applications of instructional television's six functional categories. Sometimes educators have insisted that the intensely personal task of education cannot be mixed with the cold scientific approach of technology. The literary tradition of education sits uneasily with the scientific tradition of the technologies, but television already has been used imaginatively and effectively for education in many health fields. Medical, dental, and health technology educators have used television for:

1. *Transportation:* of students to surgery, psychiatric interviews, clinical demonstrations, etc., of instructors to the student at the bedside.

2. *Magnification:* to see what is really happening in the test tube, the mouth, or on a gauge during a detailed demonstration.

3. *Memory:* to record for later analysis at a post-clinical conference or to transfer to film as part of a permanent clinical library.

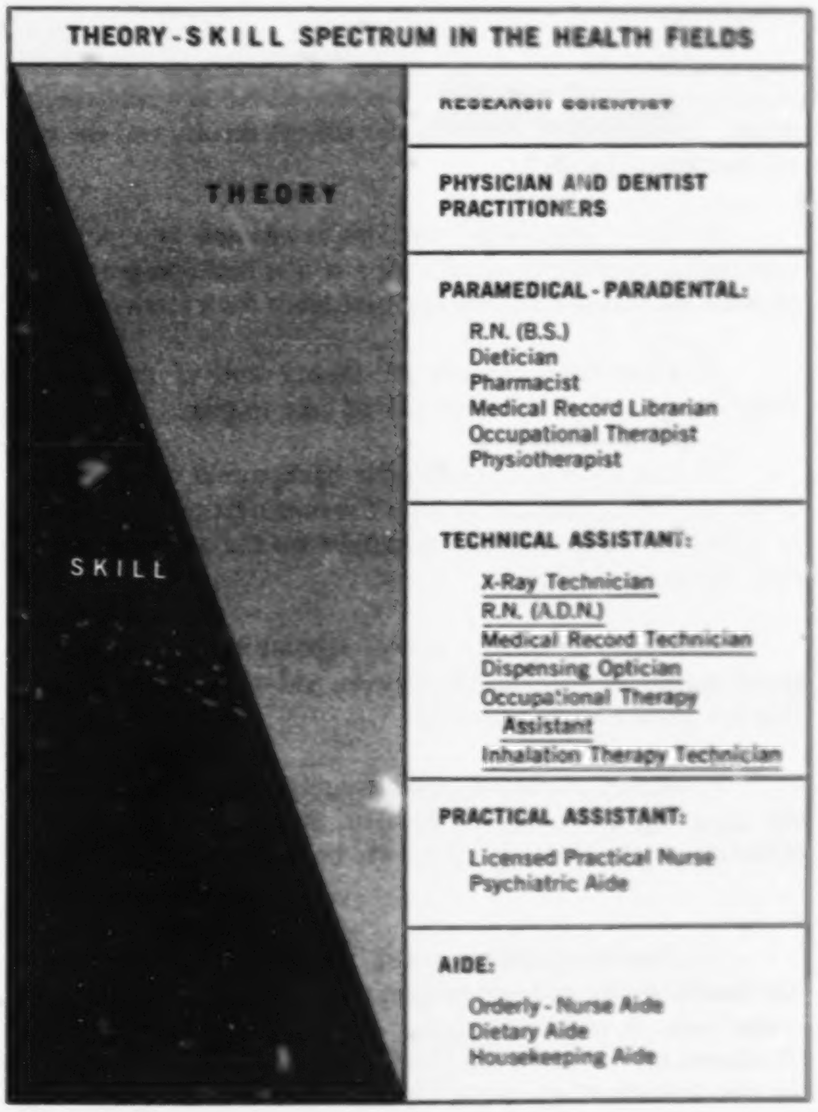
4. *Transformation:* to see through body tissues with x-ray image intensifiers, in the dark with infrared sensitive tubes, and within body cavities with fiber bundles.

5. *Associations:* making simultaneous comparisons by using actual pictures in conjunction with diagrammatic drawings and by alternate use of live film and videotape presentations.

6. *Multiplication:* by showing the same image at close range to any number of students in large auditoriums, separated rooms, or even separated buildings.

A substantial portion of the educational process has always involved awkward and imperfect translations. The teacher must translate previous visual experiences into word descriptions. The student, hopefully, reconverts these descriptions into something approximating the teacher's original mental image. The potential for circumventing these awkward translations is one of the great hopes of those working with television in the clinical setting. The television camera comes closer to becoming the "fly on the wall" than was ever possible with the bulky motion picture camera. Perhaps the greatest benefit to clinical education will be TV's contribution to what Dr. David Ruhe calls *sensiture*, as a counterpart to literature, our great store of written knowledge. The precise illustration, the elusive example, the classic case can be identified and transferred to film as a permanent contribution to the teaching process. Skillful editing can gradually bring into being a vast storehouse of material that will enable the student and instructor to figuratively move to the bedside of appropriate patients in the educational process. At last community colleges are beginning to use television to great advantage for teaching the health technologies.

To summarize, we find our society faced with a growing and shifting need for technicians and assistants in the health field. Hospitals are turning over some of their educational activities to two and four-year colleges. Community colleges have already demonstrated their ability to successfully prepare health technicians in selected fields. Some well-conceived pilot programs give promise of a willingness on the part of the colleges to expand their activities. New educational programs to meet the needs must be regionally developed by study groups of health professionals, technicians, and educators. The colleges must establish relationships with health agencies for use of clinical facilities. Most important of all, a corps of outstanding technicians must be identified, recruited, and prepared as teachers before there is much hope of meeting this challenge for better health care. The problem is urgent but can be resolved by imaginative planning and bold leadership on the part of junior and community colleges.


THEORY-SKILL SPECTRUM IN THE HEALTH FIELDS
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SKILL
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PHYSICIAN AND DENTIST PRACTITIONERS
PARAMEDICAL - PARADENTAL:
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X-Ray Technician
R.N. (A.D.N.)
Medical Record Technician
Dispensing Optician
Occupational Therapy Assistant
Inhalation Therapy Technician
PRACTICAL ASSISTANT:
Licensed Practical Nurse
Psychiatric Aide
AIDE:
Orderly - Nurse Aide
Dietary Aide
Housekeeping Aide

Building A New Allied Health Curriculum*

Since new health technology programs are occurring with increasing frequency throughout the country, junior colleges are confronted daily with the enormous responsibility of assisting the community in meeting some of their health manpower needs. With a new junior college scheduled to open almost weekly in the next year, the problem is compounded by the lack of qualified paramedical supervisory or administrative staff which can be responsible for the entire mission. Opening a new college is a complex, many-faceted job involving financing, recruitment, curriculum development, community relationships, and dealing with the serious shortage of experienced personnel to actually assume responsibility for development. Getting off to a good start depends upon several key factors and it is to this end that this paper is written.

Experience gained at Dallas County Junior College in Dallas, Texas, and the State Division of Vocational Education in Olympia, Washington, may be helpful to new colleges in their primary efforts and possibly even to established schools trying to expand allied health programs. Certainly some of the situations, problems, and solutions that we experienced could provide some red flags and green lights to ambitious but-not-too-experienced program developers.

More than two years ago El Centro College (the first of seven in a planned junior college complex) was in early formation. Carpenters, plumbers, electricians, architects, and painters were rushing about to bring the college to an actuality—a feat accomplished in eight months. During that time a master advisory committee for health education was appointed by the president of the junior college district. The committee's purpose was to advise the college administration about community needs for health occupations education, to set priorities, and to identify resources. Upon the advice of this committee, two occupations were selected for development the first year–dental assisting and practical nursing, with dental assisting to be developed first and practical nursing to follow as soon as feasible. Subsequently, special "skill" or technical groups were appointed as actual working committees to assist the college representatives. In the case of dental assisting, the group was made up of equal numbers of dental assistants and dentists – with the current president of the local dental society automatically a member, as well as a representative from the local dental school.

It is important to plan a broad enough representation on the working committee to insure the kinds of data and know-how that are essential to thorough program planning and follow-through. With the help of such a group, a course proposal or prospectus can be developed. This was our next move in Dallas. We presented explicit details of the project to college administration and the District Board of Trustees as well as the Texas Education Agency. Data described program title, anticipated length, credentials and credits to be earned, course objectives, a job description, anticipated enrollment, employment potential, wage scale, members of the committee, suggested curriculum, course descriptions, supplies and equipment needed, and student and instructor qualifications. In addition, the method of financing and numbers of instructors needed were included.

In general, the cooperation on the part of hospital representatives was a major factor in any success we achieved. In fact their enthusiasm was the primary impetus in getting our program going. Open lines of communication and continuous feedback kept us informed of current happenings and enabled us to get support data at any stage of the game.

Needless to say, more than one meeting of the "skill" committee was necessary to develop the course prospectus. With the data supplied by these specialists the prospectus can

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Ruth A. Jacobson, program specialist, Health Occupations Education, State Division of Vocational Education, Olympia, Washington.

be written. Either an industry representative, knowledgeable in the specific field, or a college paramedic, or vocational staff member can be assigned the actual writing. The mechanics of typing, editing, and duplicating are part of this assignment and constitute no problem other than manpower but need to be considered.

As soon as the proposed program was approved (this involved college administration as well as state education agency representatives), a time sequence estimate was made in which major events were scheduled. With a junior college there are built-in deadlines around which plans must be structured. This in itself is its own safeguard, but is frustrating none the less. For instance, schedule printing, textbook requests, registration, and actual starting dates are on a fixed schedule which usually must be met. With more schools relying heavily on computers, these dates are milestones around which one must work.

In the case of El Centro College, classes were to begin on September 10, allowing a maximum of five months development time. Since the campus building was at that time only a nine-story downtown department store, program development occurred concurrently with building remodeling and operational systems development.

Equipment specifications were written and bids sent out with the help of the purchasing department. The laboratories and classrooms were planned in detail with architects. Meetings with the director of vocational education and academic chairmen produced a curriculum. At this time an instructor was selected and began to function as an advisor. Textbooks were reviewed and ordered; counselors' information produced; curriculums completed; publicity brochures designed and ordered; newspaper and other recruitment publicity planned. Using a format selected by the dean of instruction, work began on the course syllabi.

As soon as bids were accepted, orders were immediately placed for equipment since delays in delivery were anticipated. Through continued contact with the advisory committee, facilities for clinical experience were explored. Teaching materials, lesson plans, films and other media were at least all in the planning and evaluation stage. Periodically as these events were moving along, the "skill" committee met for progress review and additional technical support.

With the first program moving satisfactorily, the stimulus was given to begin work on the second paramedic program, practical nursing, with a target date of November 1. Along with this development, other program requests began to arrive, resulting in the appointment of *ad hoc* committees to look into radiologic technology, medical office occupations, and the field of inhalation therapy. With these groups, longer range planning was desirable since considerable study and data collection was needed.

As the time grew near for classes to begin in September, more deadlines were met. Even though laboratories were far from complete, things were falling into place. It looked as if we would be meeting our first class. Students were enrolled, and dental assisting and practical nursing got underway. This process of development continued with added momentum, with two new one-semester classes, one for nursing aides and one for central service technicians opening in the spring of 1967. In the fall of 1967, with a great deal of dedicated assistance from all "skill" groups, two-year associate degree programs began in radiologic technology, medical office occupations, and inhalation therapy. One year later, an operating room technician program began, and a medical record option was added to the medical office cluster – bringing the total number of division programs to eight.

All of this involvement led to some conclusions worth sharing. First, more time initially would have been nice, but often the pressures of new college deadlines were an advantage more than a handicap. The esprit de corps fostered by building something new and exciting proved a marvelous incentive. Second, the use of an organized systems approach to the undertaking was effective. Positive end results were possible since many difficulties arising after the project is underway are due to inadequate or incomplete planning during the initial stages.

The system selected for use will depend somewhat on the philosophy of the administration, or what naturally appears to be useful and comfortable to work with. It may be a fairly simple time sequence chart or a more detailed network flow chart. In any event, begin with one and modify it to your own individual needs. You might begin with an identification of the mission objectives, scope of the mission, and the major components. For instance, the objective may be the implementation of a single health occupation program, or it may be a feasibility study and development of a series of programs over a longer period of time.

While our experiences in Dallas definitely illustrate the value of team planning, with hospital, health, and school specialists working together, even better utilization of manpower, and more specific spelling out of responsibilities and needs can be achieved by taking advantage of systems engineering concepts.

Such an approach is total in that it integrates all factors that have to do with the objective. With this method, one can lay out or structure the total project so that both the beginning and the end of all the events are seen in proper focus and relationship. So often a project such as the development of paramedic programs is vaguely visualized, planned, and begun, with a very unclear goal somewhere out in the distance. With a systems approach, the total process of getting a new program underway can be broken up into a series of small manageable steps.

In this way realistic goals can be set for both interim and long-term needs; responsibilities can be assigned with more assurance that important details will not be overlooked until too late – or even forgotten. Alternatives can be built in and allowance made for time variables. With a time sequence schedule laid out in advance there can be prior understandings by all involved as to individual or agency responsibility for the accomplishment of specific events.

The final conclusion is that the "skill" committees need to be truly working committees, providing technical know-how which the instructor would normally provide. With the prohibitive cost of program development most schools cannot afford to bring an instructor on board too many months in advance, so the expert advice of committee members is often a necessity. It is vital, however, that a college staff person such as the vocational education director or paramedic division chairman direct and coordinate the activities.

With the multiplicity of health care programs coming on the scene, and the mushrooming of junior colleges, it is unrealistic to expect that many schools will be able to find a health occupations supervisor with broad occupational experience and at the same time some concept of junior college programs and development. But such leadership is worth working for.

Core Curriculum in Allied Health Education*

In recent months the allied health professions have been enjoying a great deal of attention from educators interested in the development of a core curriculum. Although at one time or another almost every academic area has been a focus for similar interest, none can claim to be a more likely or persistent cynosure. What is there about these health-related specialties which have made them so attractive a target for this activity? First, the very name allied health professions suggests that there exists among this diverse group a commonality of objectives as well as a sense of teamwork, and implicit in this is the likelihood that there is or should be a sharing of learning experiences. More important, however, is their sheer weight of numbers.

No other group of health professionals augurs to grow as rapidly as this burgeoning collection of disciplines. Many of us concerned with the delivery of health care see in the evalutionary expansion of this group and their organization into effective teams, a possible solution for the health care problems of tomorrow.

The consequent demands that the preparation of such a variety of personnel will make on our already overburdened colleges and universities beggars the imagination. It is a small wonder then that academicians are attracted to the concept of a core curriculum for the allied health professions, like so many moths to a flame. And each envisions in its glow his own special alchemy.

The faculties in the basic sciences, who are already being asked to develop still another variation of their subject for yet another new type of allied health professional, find any promise of simplifying the curriculum most attractive.

The educator aware or his students becoming more and more submerged in a melange of apparently irrelevant and sometimes repetitive data recognizes in the core curriculum an opportunity to blend present information in a more comprehensible fashion.

In addition, the development of such a common educational base for the allied health professions would seem to permit greater career mobility vertically and laterally than has heretofore existed. The possibility of having a pool of health professionals whose disciplines are more responsive to both a changing science and a shifting societal need is an appealing one.

Finally, if the health care teams of the future are to be effective, the members of these teams will have to be trained together sometime in the course of their educational experience. The core curriculum could be an ideal place to begin. Early enough perhaps in the careers of each to stifle prejudice and foster an appreciation of and respect for each others' roles.

With such promise, one wonders why there has not been more evidence of progress being made in the development and implementation of these core curriculums. Only those of you who have had the humbling experience of attempting to develop such a model will appreciate the moth-flame analogy.

Some of the delay and the resultant frustration encountered by those intrepid few who have tried, is embodied in the struggle to change the traditional methods of course presentation. Some of it is related to a lack of precise data on just what a particular allied health profession requires in the way of preparatory coursework. Some is due undoubtedly to the restrictive and archaic accreditation and licensure requirements which still fetter certain of our programs, and some may be the result of setting for ourselves what are unrealistic goals. We may be asking of this principle

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**Reprinted from the Journal of the American Medical Association, October 6, 1969. Written by Joseph Hamburgh.*

of core curriculum some things which it cannot do. Perhaps even the multiplicity of expectations themselves produce enough ambiguity to interfere with understanding. We are all aware of the resistance which can result from a mere lack of communication.

Our School of Allied Health Professions at the University of Kentucky has encountered many of these same obstacles in varying degree over the several years of our existence, and we have found no simple solution for their removal. However, some good has come of their intimidating presence, for they have forced us to retreat from the naive position of expecting the core curriculum to be the panacea for all of our educational ills and forced us to assume a more realistic attitude toward this concept. What I would like to present to you are some of the very limited exploratory thrusts we have made. Please, recognize them for what they are; not the bold strokes of a Bellerophon, but the tentative probes of a slightly singed moth.

The development of a core curriculum for the allied health professions finds historic precedence in the evolution of the liberal arts programs of the last century.

In general, the first two years of the typical baccalaureate program of today are devoted to basic studies and the last two are directed at a major or specialty preparation. I use the word preparation to avoid the conflict of the terms "education" and "training." Some of my more tradition-minded colleagues have tended to refer to these specialty efforts as "training programs." I personally find this sophistry unimpressive. To paraphrase Whitehead's statement in his book *The Aims of Education*, there can be no education without training and no training without education. Be that as it may, the first two years of this type of general studies program can be seen to represent in reality a core curriculum of a type.

I have arbitrarily clustered the general subjects into three main categories: environmental, communicative and interpretive (Table 1). I recognize this grouping is open to challenge and that some of the subjects conceivably might be placed under another or several of the three main headings. I believe, however, the three categories accurately present the purposes of a general education: first, to describe our environment; second, to interpret our relationship to this environment; and finally, to provide the means by which we communicate this information. I will come back to this later. Let me move on now to some of our definitions and assumptions.

TABLE 1.–GENERAL STUDIES ENVIRONMENTAL

Environmental	Communicative	Interpretive
Biological sciences	Humanities	Behavioral science
Physical sciences	Languages	History
Social sciences	Mathematics	Philosophy

Our definition of a core curriculum presumes that within this collection of health-related professions there is a commonality of information and skills which is relevant to all students. Further, that these can be presented to them jointly or coordinated in some meaningful amalgam.

We also assume for each course three basic purposes or levels: (1) survey; (2) service; and (3) specialization (sequential). The first level is informational. In this case the student receives a general survey of the discipline, not as a superficial dusting, but as a succinct presentation of the important course elements. The second or service type provides the student with a tool to facilitate his capacity for handling another specialty, for example, the need of calculus for the student interested in physical chemistry. Finally, the specialty track is designed to lead a student through a sequence of courses within a particular discipline toward professional competence in that area.

If we return to the general studies grouping (Table 1) and look at it now in light of our definitions, we can demonstrate two basic weaknesses. First, this is purely a collection of topics and represents no "meaningful amalgam," and second, there is no defined course level, that is, information, service, or specialty. The mere assemblage of courses offered cafeteria-style does not automatically make a core curriculum.

These courses must be available not only each at its proper level, but also articulated so their material is presented with the minimum of repetition in a "syncytium" of pertinence. This latter requirement is the one which taxes the ingenuity and talents of our best educators.

TABLE 2.–SPECIAL STUDIES CORE

Environmental	Communicative	Interpretive	Directive
1. Man and his environment	1. Health terminology	1. Health ethics	1. Emergency care
a. Natural sciences	2. Techniques of interview and communication	2. Behavioral science	2. Preventive Medicine
b. Social sciences		3. Statistics	
c. Community health	3. Computer science		

The grouping shown in Table 2 represents what some of us have conceptualized as a core curriculum for the allied health professions within our school.

You will note that we followed the same basic arrangement of the previous general studies grouping and have added a fourth which is labeled directive or technical if you wish. This latter group supplies the pragmatic dimension to the purposes of an education: the preparation of a student for a specific task or role. It is this category which expands into the specialty preparation during the final years of the curriculum.

I would like to consider the last three groups first. Under communicative are listed now the specific courses which we feel are basic to the needs of all of our students. Health terminology and interviewing and communication would be taught at the level of a service course, with computer science probably requiring all three levels depending on the previous preparation of the student and his specific professional pathway.

Under interpretive are the courses which we consider specific to this category. Both health ethics and behavioral science will probably be offered at the survey level, with statistics, like computer science, requiring all three levels.

Under directive we have emergency care or first aid and preventive medicine. Both of these would be presented at the service level. My faculty abound with heretics who believe their students, at whatever level of function on a health care team, should have at least as much skill at providing emergency care as do our boy scouts.

Incidentally, since most medical faculty would probably find teaching so prosaic a subject quite tedious, we have been considering the use of discharged Naval Hospital Corps instructors for this task.

The course in preventive medicine would undertake not only to present the traditional subject matter, but to do so in a fashion which would make all of our students health educators of a sort. In my mind, there is no conflict of interests in having a physical therapist discuss knowledgeably with a stroke victim the hazards of smoking while attempting to effect his rehabilitation.

So far what I have presented of this core curriculum has been rather straightforward, a listing of courses which could be taught individually with minimal articulation. The last grouping, environmental, is the one which we consider of primary importance and which will probably be the most difficult to package.

We would like to present "man and his environment" as a single course and most probably at the informational level. Without going into too much detail about the separate elements of this, because in fact they are still quite nebulous, we hope that at the completion of such a course the student will be aware not only of the component parts of the human organism but also comprehend the mechanisms by which he attempts to maintain homeostasis in an apparently unfriendly environment. This presentation will include under the natural sciences the necessary elements of anatomy, physiology, chemistry, and microbiology. Further, the environment to be considered will not be limited purely to the physical but would include the socioeconomic, geographic, and cultural as well–the social sciences.

Finally, community health would describe the available organizational structures of our health care systems and how they function to provide for the health professional and the patient the avenues as well as the facilities for care. We hope this material can be presented in a meaningful amalgam. It was Karl Popper who noted that we are students of problems not students of subjects. Disciplines such as anatomy and chemistry do not exist outside the classroom. We are painfully aware of the difficulty of preparing such a course and of the usual fate of conjoint courses to get "out of Joint," but we feel that the potential reward which could be realized from such an arrangement is worthy of the effort. We assume also that in those cases where a particular career choice would require a student to pursue one or more of these subjects in greater depth, a presentation such as this would provide him with a firm base of understanding.

In our estimate the presentation of "man and his environment" would occupy and be equivalent to two laboratory courses of two years' duration or a total of 20 credit hours. If we present each of the remaining eight subjects as a regular three-semester-hour course, we have consumed a total of only 44 hours. This will still permit the student the freedom to take other electives from the general studies curriculum during the first two years of a baccalaureate program.

We would recommend that a student enter the core curriculum as early as possible in his college experience, since specialty preparation in the allied health profession usually consumes most of the remaining two years. The problem involving student transfers from other junior or senior colleges not having such core curriculums are real but not insurmountable. Similar core curriculums could be adapted as well to the associate degree level. As a matter of fact, just such an experiment is already in its second year at one of our community colleges. At Somerset Community College we are attempting to use a core curriculum in the first year of training for five different allied health careers.

In this discussion I have limited the consideration of a core curriculum to the allied health professions. It should be apparent that other of our health professionals might well profit from their participation in the same program. At least, it seems worthy of a trial.

In conclusion, I realize also that what I have presented is indeed only the bare bones of a core curriculum and that a great deal of effort and planning still lie ahead before this skeleton is properly draped with the musculature of action.

Master Plan for Meeting Community Allied Health Needs*

When the author took his present position as chairman of the newly organized Health Sciences Division at San Joaquin Delta College in Stockton, California, last fall, he recommended use of the master plan approach to meet the allied health training needs of this community.

This idea which had previously resulted in the first county school health advisory board and the first coordinated elementary-secondary health instruction program was approved by the San Joaquin Medical Society Committee on Training Programs for Health Professions. The purpose of the master plan was: (1) to prepare a cooperative long-range plan for meeting the community allied health services personnel training needs in the Delta College District; (2) to avoid duplication and overlapping of allied health training programs; and (3) to improve communication and cooperation between community health agencies.

* * *

Operational phases of this master plan included:

1. Preparation of a directory of twenty-four representative community health agencies. Among these were the Cancer Society, Health Planning Association, Hospitals, Heart Association, Medical Assistants Association, Medical Society, Psychiatric Technicians Association, Public Assistance Department, Registered Nurses Association, State Board of Medical Examiners, Tuberculosis and Health Association, Visiting Nurses Association and Vocational Nurses Association.

2. Identification of community allied health personnel training needs. These were determined by personal conferences with leaders of the twenty-four health agencies and the staff of the college Health Services Division during a two-month period. Training needs identified are listed below in descending order.

Nurses aides, home health aides, homemakers

Medical assistants, medical records technicians

Registered and vocational nurses

Registered and vocational nurses (post-graduate intensive care course)

Mental health technicians

X-ray technicians

Core program for all students in the allied health services

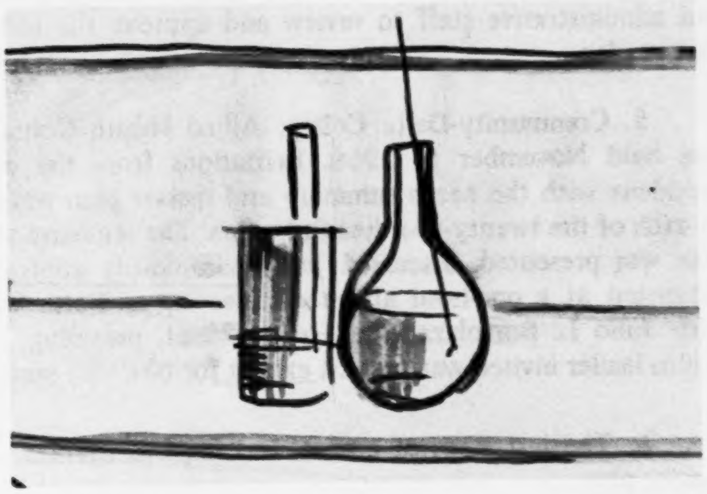
Dental assistants

Medical electronic equipment technicians

Medical records librarians

Physical therapy assistants

Registered and vocational nurses readiness programs



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*Burt M. Kebric.

3. Preparation began on a tentative master plan which looks like the five-year plan below:

FIVE-YEAR MASTER PLAN FOR HEALTH SCIENCES DIVISION

1968 - 1969

DENTAL ASSISTANTS (specifications for Pacific Avenue Campus)
MEDICAL ASSISTANTS, MEDICAL RECORDS TECHNICIANS (fall semester)
NURSES AIDES, HOME HEALTH AIDES, HOMEMAKERS (spring semester)
REGISTERED NURSES READINESS COURSE (spring semester)
VOCATIONAL NURSES, MANPOWER DEVELOPMENT AND TRAINING ACT (spring semester)

1969 - 1970

MEDICAL ASSISTANTS, MEDICAL RECORDS TECHNICIANS (spring semester)
MENTAL HEALTH TECHNICIANS
R.N. – V.N. – INTENSIVE CARE (postgraduate course)
VOCATIONAL NURSES – M.D.T.A. (second class begins)
VOCATIONAL NURSES – READINESS COURSE

1970 - 1971

CORE PROGRAM FOR ALLIED HEALTH SERVICES
DENTAL ASSISTANTS
X-RAY TECHNICIANS

1971 - 1972

DENTAL ASSISTANTS (second class begins)

1972 - 1973

NEW CAMPUS

- INHALATION TECHNICIANS
- PHYSICAL THERAPY ASSISTANTS

4. A conference was called with the college president and administrative staff to review and approve the tentative master plan.

5. Community-Delta College Allied Health Conference was held November 6, 1968. Invitations from the college president with the needs summary and master plan were sent to each of the twenty-four health leaders. The tentative master plan was presented, discussed, and unanimously approved as presented at a one-hour afternoon meeting at Delta College with Julio L. Bortolazzo, college president, presiding. Every health leader invited was present except for one who was ill.

6. The last step, of course, was implementation of the master plan.

Accomplishments in less than a month following approval of the master plan include:

- A nurses aides, home health aides, homemakers course for January 1969
- Preparation for registered nursing course (for students lacking basic skills)which begins January 1969
- Expansion of the RN, LVN, and medical assistants programs in 1969
- College approval of the first accreditation of RN and LVN programs by the National League for Nursing, Spring 1969
- CORE course for allied health students was being discussed.
- Allied health training specifications for a new college campus have been prepared.
- 1969 course for upgrading psychiatric technicians was planned.
- Effective cooperation and communication was established with community health agencies.

An annual evaluation will be scheduled to determine necessary modifications in the master plan.

Career Mobility in Allied Health Education*

So much has been said about the concept of career mobility and so little has been done to implement this concept that we are immediately faced with the simple questions: Is the idea of "career mobility" fiction or fact? Is it a philosophical fable or can it be translated into reality?

In the brief time that I have, I would like to examine some of the needs for career mobility; some of the factors which might make it work: a few of the attempts already in operation; and finally, where do we go from here? This may sound more like the outline for a book than for a 20-minute speech, but it gives you an idea of the breadth of this much-discussed subject.

The idea of "career ladder" has come into prominence at a time when health education and health professionals are attempting to answer the dilemma of the century: by what means can we increase health manpower at a rate which will provide qualified personnel for health care systems capable of delivering in quality and quantity what has been promised as an inalienable right of society today?

The visual concept of "ladder" is quite explicit: within each health profession there should be the potential for educational and occupational movement in a vertical, upward thrust that might make it possible, based upon completion of educational requirements and measured capabilities, for an individual to move with comparative ease from the level of the aide, to the assistant, to the full-fledged professional practitioner. There are those individuals who have proposed that this should first of all be possible within a specific allied health profession and others who contend that there is a core of health content that might make this movement possible for a professional nurse or physical therapist, to name only two examples, to move into medicine, or a dental hygienist into dentistry, without necessarily tripping down a rung or two on the ladder before the ascent to the top of the educational or professional field.

In addition to the ladder concept, recently the "lattice" concept in health careers has been described. This purports that in addition to the vertical-movement theory in a health field, there should be provided a possibility for the horizontal or lateral transfer *between* health professions, and, specifically, allied health professions. Entry would not be at the lower level of the ladder or lattice, but with recognition of educational and occupational experience common to several health fields, entry to a new health career would be relatively easy to achieve by such lateral movement.

Do not think that I am being facetious when I tell you that during the past month this vertical-horizontal movement in health careers was visually conceived as the "jungle gym" approach, with various modes of entry, transfer, and ascendance.

With this brief introduction as background, I trust that you can appreciate why I have chosen the term "career mobility" today in this presentation, for the "ladder," "lattice," and "jungle gym" are all means of conceptualizing the intense need in the health occupations to examine critically the educational and vocational components which will provide the best trained and greatest number of health personnel for the future.

Need for Career Mobility

Why has there been so much discussion in the past few years about the concept of career mobility? Educators, as well as enlightened professional workers, recognize that closed doors and dead ends are ever present in many if not all of the allied health occupations.

**Reprinted from the Journal of the American Medical Association, October 6, 1969. Written by J. Warren Perry.*

Serious, constructive steps have been taken in some of these fields to spell out the specific roles and job functions of the aide and the assistant categories of workers. Educational criteria or essentials have been developed in some cases for the community junior colleges charged with setting up training programs for allied health.

But the dead ends of occupational movement at especially the lower levels spell problems in job satisfaction, a curtailment of material rewards, and, more importantly, a dwindling of motivation and initiative to perform the highest level of individual service function on the job.

We must not accept that the high percentage of women with marriage and the family on their minds is always the motivating factor for increasing incidence of occupational "drop-outs" from health occupations, transfer from job to job in clinical facilities, and considerable dissatisfaction with delegated responsibilities. When a gate is slammed shut in your face, you either have to attempt to open it, climb over or under, find another means of entry, or just withdraw from the situation. In far too many instances, a closed door in a health job has meant a permanent loss to the health manpower pool.

Loss of mobility in some health occupations can be traced to the factors of too much or too little formal education. Professional groups themselves and the educational standards each promulgates are sometimes a major force in the creation of job or professional role dissatisfaction. I am in complete sympathy with the right of organizations and associations to set high educational standards, and I have been in positions to defend these standards. But let me give you an example of the problem of lack of utilization of professional skills. A student who has achieved well in all of his general education, professional-skills courses, and in his clinical training arrives on the scene for service. What happens? He has been taught how to accept responsibility, how to plan his laboratory or treatment program–and what does he find? Too often he is in a position where his job seems related only to how well he takes orders and performs mechanical technical skills. His educational experience has prepared him for assuming a role on a health care team he does not get to assume; what disenchants him even more is that not only do other members of the team appear unwilling to accept his potential for a higher level of performance, but to his dismay he finds that members of his own profession have learned to accept such a subordinate role.

On the other hand, nothing can be more detrimental to vocational morale than for the individual to be given a task or responsibility for which he has received too little formal preparation.

It is the achieving of a balance between the educational preparation and job responsibilities that makes the professional person and his job performance more effective. Any imbalance in over-education or under-education can inevitably lead to dissatisfaction and frustration.

Factors Involved in Career Mobility

What are some of the factors that need to be given careful consideration if any measure of career mobility will become a reality in educational programs and in vertical and horizontal vocational movement?

1. A job description and a thorough job analysis must be done for the specific job level in each allied health program. Each must be analyzed in relation to specific tasks and techniques and its relationship to the patient and to other members of the health care team. This sounds so simple, yet there is little that has been done to spell out such task analyses.

2. Educational programs must be designed with statements of objectives and evaluation of role, functions, and duties to match the prepared job descriptions and analyses. Without this kind of orderly analysis, we will never be able to differentiate the various levels of proficiency, levels of performance and responsibility on which to base the education programs already in existence and those planned for the future.

3. One key will be the core-curriculum, a developmental process of educational programs at all levels. The idea of "core" must become the basis upon which educational pathways to upward and lateral mobility can be made to be a reasonable possibility.

4. We are all familiar with the kinds of equivalency testing programs established by state and local authorities for high school equivalency diplomas. There must be developed, and there has been created in some states, a means by which college credit for independent study, television courses, adult education courses, and other forms of instructional pursuits outside the concept of regular college curriculums can be evaluated and offered credit toward college and university work. There has been a major increase in such programs that have attracted students, and such educational work needs which must have recognition for transfer of credit potential.

In my own state of New York, the College Proficiency Examination Program has mounted a major project, under the supervision of the State Education Department, in an effort to open up the educational opportunities of the state to individuals who have acquired college-level knowledge in ways other than through regular classroom attendance. The academic standards reflected in the examinations are determined by outstanding faculty members from campuses across the state. More than 200 college faculty members serve as consultants for this program, in which one of the major tasks is to determine levels of performance on the examinations. Course credit is not granted by the College Proficiency Examination program; rather, this is left to the individual higher institution to do, or not to do, in a manner consistent with its particular standards.

Why have I emphasized this approach? A logical extension of the credit-by-examination concept must be conceived, developed, and fostered for the allied health professions. This is already being interpreted as one of the major needs if the mobility concept is to be achieved. The relationship of proficiency or equivalency testing procedure as might be applied to the allied health professions is self-evident, though putting it into practice will not be a simple task. If tests can be developed that will establish the common, core elements involved in various health fields, measurement of the level of performance on a test might substitute for the actual taking of some of the now required courses in many fields. Based upon effective measurement devices of such proficiency or equivalency levels, it would not be necessary for an individual to begin at the very lowest level or rung of a ladder in an allied health field, but rather one could be admitted into an educational program or level of clinical functioning based upon his measured capabilities.

5. Barriers between and among associations and agencies must be broken down if career mobility is to become a reality. This has been said so many times in so many ways that this hardly needs discussion here. The individual allied health professions would not be where they are today without the paternalistic, or in most cases maternalistic, surveillance and attention to vested interests that has characterized the slow but orderly progress of each profession. Accepting the importance of this independence of movement, is it not now about time to consider the relationship of the professions but rather upon the relationship of each of the systems of health care and the function of each in relationship to the patient? As we break down the boundaries of indifference and suspicion of intent and concentrate on the similarities which exist in educational programs and in patient care function, we will discover ways in which core courses, perhaps core curricula, will become a standard of performance. And hopefully, our students, and ultimately the patient, will come to that happy state of mutual respect through shared yet individual responsibilities that are understood and appreciated by all.

6. The relationship between community junior college programs at the associate degree and certificate level with the baccalaureate and graduate programs for the allied health professions is one of the most crucial factors involved in the establishment of career mobility concepts. The time has come when those of us in university work must admit in open forum that the solution to some of the manpower problems facing the health community today will, indeed, be met only by the emerging associate degree and certificate programs in the community junior colleges in this nation. I have a deep respect for the objectives and goals of the community junior college programs, and the efforts being expended today in the furtherance of these goals. There is no greater force in education today than the vital movement to establish this kind of institution in every sizable community throughout the country. Today, more than 1,000 such programs are in operation, and these numbers are increasing weekly. It was popular until quite recently to look down upon these programs. But I charge each one of you who has not already done so to visit some of these institutions and examine the newer teaching techniques utilized in many – the student counseling programs, the emerging new programs which respond to needs of students and communities rather than the more usual time-honored curricula of the past; then you will come to appreciate the force for health manpower that is being engendered in these new educational settings, for associate degree health programs are receiving priority development. It behooves each allied health profession and each university program to assist in all ways possible in this development. The role of consultation and assistance is the one which I strongly support, not the role of attempted domination.

Together we can come up with the means by which transferability of credit from program to program can be rationally made through careful consideration of job needs at the various levels. This educational movement will not be denied a most significant role in the society of the future. The medical and health community must be prepared to assist it, offer consultation to it, and move in harmony and collaboration with it. Anything less will be detrimental to the very fabric of health education in the United States today.

Evidence of Career Mobility in Action

Is there evidence that the career mobility concept will come into bloom? Well, I must admit that it is basically in the "talk" stage today. But there are examples of ways in which career ladders are being conceived which need to be carefully examined. There is, indeed, certain evidence that if the professional groups do not get involved and take action on this subject others are going to charge ahead.

In my own state, the Departments of Mental Hygiene and Labor are conducting major studies of the utilization of allied health personnel at all levels. The Department of Mental Hygiene has already developed a "social work career ladder for occupational therapy." For example, on the "occupational therapy ladder," among the three categories of (1) supervisory-administrative, (2) professional, and (3) supportive, nine steps or levels have been determined, each defined with requirements for entry and performance, educational requirements, and suggested salaries spelled out.

In each of the geographical areas in which you live, I am certain you know of some examples of this kind of movement in progress, and I shall not list other examples other than to say that certain medical specialties are also busy at defining the role of the professional and supportive personnel in each specialty. Psychiatry, pediatrics, and orthopedic surgery are examples of this movement.

Where Do We Go From Here?

One avenue is certain: action is required. The uniqueness of professional practice as contrasted with technical practice must be defined in each allied health field. These distinctions must be clearly stated and interpreted in the educational programs developed for the new levels of training, as well as personified in the work that each individual performs. If we can spell out the knowledge and skills needed by practitioners in each of the health occupations, we should arrive at the uniqueness in each field as well as identify those functions that may be shared by practitioners in all fields.

Curriculum revision is much in evidence today in the allied health professions. This, then, is the time for the sharing of new curricula between and among the allied health areas. We must break down the reluctance to communicate and be innovative. As new subject matter is added, we should be willing to make judicious cuts in what has gone before. Research on patient care for the allied health professions must become a paramount task, as well as continuing education for all involved in these fields. New methods of educating health personnel must be attempted, with more efficient methods of educating students at all levels.

The concept of career mobility will become a reality only when sufficient time and priority is given to deciding what the problems are in each field in attempting to prove or disprove the concept of vertical and horizontal mobility. Who should get involved in this act? It is quite certain that no formula derived by any resources other than the leadership group in the allied health professions themselves, working in collaboration with medicine, dentistry, nursing, and health educators, can bring this about.

I have great faith that the leaders in allied health can make progress in this area. But the parochial approach to just one profession must be replaced by a staunch resolve that joint action will benefit all the health professions and the individual health fields as well. Finally, the end result will be a comprehensive allied health educational and professional program which will provide for maximum student mobility and choice, with the patient we serve as the ultimate benefactor of our efforts of being allied.

Guidelines for Developing Medical Record Technician Programs in Junior Colleges*

The rapidly increasing scope and variety of vocational programs offered by junior colleges throughout the country, together with the expressed interest of many of these institutions in developing additional kinds of vocational educational programs, have resulted in requests for guidelines for organizing medical record technicians training programs. This interest on the part of accredited junior colleges should be encouraged as it expresses a need felt in the communities which they serve. So that the medical record profession may benefit by the interest junior colleges have in vocational training for hospital careers, these guidelines have been developed by the Education and Registration Committee, to encourage effective use of these facilities for training medical record technicians. It is particularly important to the profession at a time when many hospitals are finding it necessary to discontinue conducting schools for medical record personnel, because of difficulty in financing them.

The *Medical Record Technician Program* requirements would seem to be very well suited to inclusion in a junior college curriculum. The formal courses in *Anatomy* and *Physiology,Medical Terminology* and *Medical Record Science* could be taught in accredited junior colleges with required periods of directed practice experience obtained in affiliated accredited hospitals. Junior colleges already engaged in hospital-college cooperative training programs for other categories of hospital personnel, both technical and professional, would have little difficulty in establishing an additional program for medical record technicians – if medical record librarian faculty members were appointed to teach the professional courses and to coordinate directed practice assignments in the hospitals.

Although a one-year program in medical record technology could be developed for a junior college, we find that these institutions are interested in developing programs that could lead to the two-year associate in arts or associate in applied science degree. Therefore, guidelines are developed for two types of programs for medical record technicians – one-year and one summer session, and two-year programs.

FACULTY

Director of the program should be a registered medical record librarian regularly appointed to the faculty of the junior college, in accordance with usual procedures for faculty appointment. Additional instructors in Medical Record Science, who meet the requirements of the college, may be appointed also, full time or part time. Minimum educational and experience requirements for MRT program director are a baccalaureate degree, registration by the AAMRL, and three years experience in Medical Record Science.

College faculty should be sufficient in number to give a faculty-student ratio that is comparable to other on-going programs in the institution. One professional faculty member to ten or twelve students would seem to be a reasonable basis on which to plan. A part-time program director for the college would be acceptable until such time as the student faculty ratio required the full-time attention of one person.

AFFILIATED ACCREDITED HOSPITALS

Hospitals selected to participate in the medical record technology programs should be good-sized, general hospitals accredited by the Joint Commission on Hospital Accreditation. The medical record departments should be well organized, under the direction of a Registered Medical Record Librarian, with sufficient staff to permit adequate supervision of students.

**Written and approved by the Education and Registration Committee of the American Association of Medical Record Librarians.*

TECHNICAL COURSE CONTENT

(Determined by the requirements of the "Essentials for Medical Record Technician Schools" – AMA-AAMRL)

Technical Course Content	*Clock Hours in "The Essentials"*	*Approximate Credit Equivalent*
Medical terminology	45 hours	3 semester or 5 quarter credits
Anatomy & physiology	60 hours	4 semester or 6 quarter credits
Medical record science		
lecture	90 hours	6 semester or 9 quarter credits
laboratory	90 hours	3 semester or 5 quarter credits
Medical record science (directed practice)	540 hours	9 semester or 12 quarter credits
	TOTAL:	25 semester or 37 quarter credits

The hospital chosen for the primary affiliation site should be large enough to provide a variety of medical care services, and to provide the various kinds of medical record technician practical experience required for students. This would usually be a hospital with a minimum of 4,000 patient discharges per year. Medical record departments chosen should provide an opportunity for student practice in all phases of medical record technician work: i.e., stenographic pool; quantitative analysis of medical records; hospital statistics and reports; the coding and indexing of disease and operation; preparation of medical correspondence and medical abstracts; filing of medical records and reports; experience in the admitting office; and preparation of medical records and reports for adjunct departments, such as x-ray, laboratory, and clinical and surgical pathology reports.

ORGANIZATION OF PROGRAM

Either a one-year program of 10 to 11 months duration, or a two-year program leading to an associate degree in arts or applied science, could be developed if the required technical courses and practical experience were provided. The basic medical record technician program could be completed in 10 to 11 months, but as many junior colleges prefer to develop technical vocational programs leading to an associate degree, a two-year program is also suggested.

One-year Program: 10 to 11 months – 2 semesters (or 3 quarters) and one summer session. Approximately 32 semester credits and 8 credits for summer session total 40 credits. Required courses in medical record technology would total 25 semester credits, allowing approximately 15 credits for general education subjects, liberal arts and sciences.

Two-year Program: (leading to an Associate in Arts or Associate in Applied Science Degree in Medical Record Technology). The required Medical Record Technology courses would be taken, plus additional general education courses in line with school requirements or student preference. The summer session between the first and second years could be used for supervised practical work, and practice in affiliated hospitals during the school year could be integrated carefully with the Medical Record Science lecture courses.

CURRICULUM

Planning for one and two-year programs is based on *15 week* semesters.

Laboratory Practice: Should be closely coordinated with medical record science lecture, particularly during the first semester medical record science is taught. Introduction to medical record procedures should be carried out through planned laboratory experiences, prior to hospital assignment for directed practice.

Credit assignment for laboratory practice is suggested on a 2 to 1 basis (2 clock hours per week equals 1 semester credit).

Directed Practice: Practice in a hospital medical record department should be planned for the second, third and fourth semesters in which medical record science is taught – after adequate introduction to policies and methods has been accomplished through lecture and laboratory practice. Block assignments of 4 to 6 hours at a time are recommended. At least 6 to 12 clock hours each week should be planned during the last three semesters of a four-semester program.

Credit assignment for directed practice is suggested on a 4 to 1 basis (4 clock hours per week equals 1 semester credit).

Summer Session: If school requirements preclude the suggested amount of directed practice during the regular school year, a summer session may be planned between the freshman and sophomore years, in which one or two academic courses could be taken as well as directed practice experience in affiliated hospitals.

RECOMMENDATIONS FOR NON-TECHNICAL COURSES

In a one-year program (10 to 11 months) 2 semesters and one summer session, with a minimum of 25 semester hours of credit required for the technical courses, a student could still earn 15 semester hours of academic credit in general education subjects. This would be the equivalent of approximately one semester of college work.

The associate in arts or applied science program would permit wider choice of general education courses. Recommended elective courses would include English composition and speech, secretarial practice, mathematics, ethics, psychology, literature. Other courses as required by the institution, should provide a broad general education – American history, physical education, sociology, philosophy, religion.

The division of general education and technical courses might be on the basis of: 40 per cent - 45 per cent general education subjects; 60 per cent - 55 per cent specialized medical record science subjects.

Degree: None for a one-year program; Associate of Arts or Associate in Applied Science, depending upon the junior college requirements for the two-year program.

MEDICAL RECORD TECHNICIAN PROGRAM HOURS FOR SUPERVISED LEARNING EXPERIENCE

Incorporated in the program for the preparation of medical record technicians should be planned field and laboratory practice and on-the-job project assignments, case studies, and similar educational designs which allow for the application of previous and on-going professional learning under the direction of competent instructors and practitioners.

In general, it is recommended that this supervised learning experience be arranged for at least 1 day (6 hours) per week, during the semesters in which medical record science is taught, either in the one-year or two-year programs; and that during the last one or two semesters, this time be increased, as necessary to make a total provision for 500 to 600 hours of laboratory and directed practice experience in all during the one-year program or the two-year AA or AAS program.

Planning could be on the basis of credit assignment as follows: Laboratory work – 30 clock hours (2 clock hours per week) for one semester credit; and Directed Practice – 60 clock hours for one semester credit.

MAJOR CONSIDERATIONS

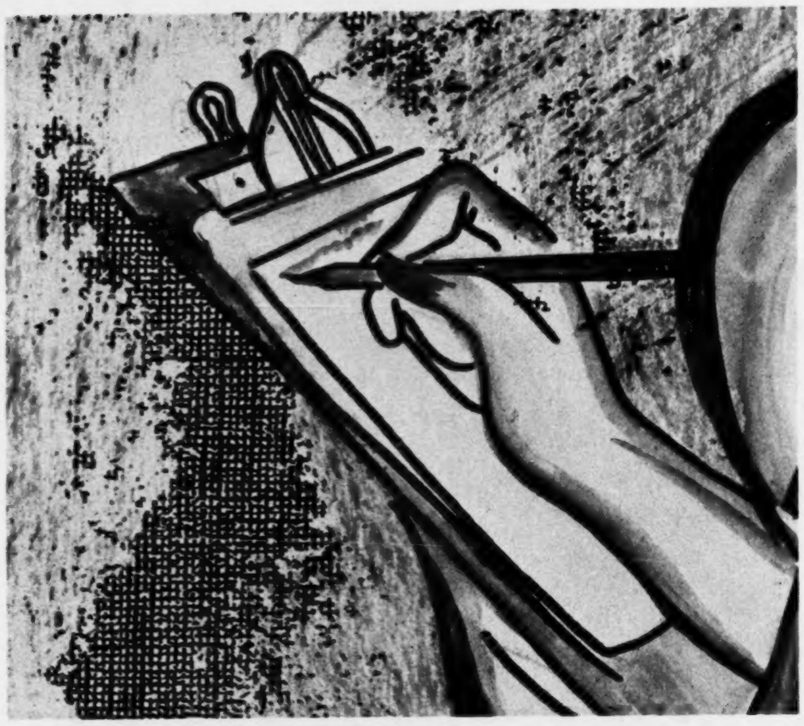
1. Courses in medical record science should be taught by registered medical record librarians.

2. Planning and coordination of an effective program of directed practice experience with directors of affiliated hospital medical record departments should be the responsibility of the medical record librarian program director.

3. Continuous evaluation of the effectiveness of directed practice experience as well as the acceptability of the sites should be carried out by the program director.

4. Continuous evaluation of the technical and nontechnical curriculums should be carried out by the director of the program and the responsible college curriculum committees.

5. A joint program advisory committee composed of representatives of the college and affiliated hospitals is recommended.



SUGGESTIONS FOR PLANNING

1. The entire MRT program, lecture, laboratory and directed practice experience should be planned to fall within regular school sessions, semesters, quarters, or summer sessions.

2. Academic credit should be arranged for laboratory and directed practice experience.

3. Summer sessions may be utilized for directed practice experience when necessary. However, if the AA Program is carefully planned, there should be no need to use two summer sessions for directed practice.

4. The curriculum should be planned to include those liberal arts and science credits which would transfer to four-year medical record science programs, if students wished to continue study toward a baccalaureate degree.

5. Some of the clock hours allocated for activities in the instructional program listed for directed practice experience may be carried out in a college classroom or laboratory situation, when appropriate (medical transcription practice, discharge procedures, coding and indexing, etc.)

Theoretically, the junior college program should provide a terminal course in medical record technology for one who wishes immediate employment in a medical record department of a hospital or clinic (under the supervision of a medical record librarian) and who does *not* wish to go on for a baccalaureate degree. However, in planning the program, the *General Education courses* should be those that would transfer to an institution offering a four-year program in medical record science, in the event the student wished later on to continue studies leading to a degree in medical record science. Transferability and acceptability of a part of the technical course content depend upon the regulations and policies of the institutions involved.

Four sample curriculums follow:

FIGURE ONE

ONE-YEAR PROGRAM

First Semester	
English	3 cr.
Anatomy & physiology	4 cr.
Medical terminology	3 cr.
Medical record science	
lecture	3 cr.
laboratory	1 cr.
	(30 hrs.)
Physical education	1 cr.
Typing, secretarial practice or electives	2 cr.
	17 cr.

Second Semester	
English	3 cr.
Mathematics	2 cr.
Medical record science	
lecture	3 cr.
laboratory	2 cr.
	(60 hrs.)
directed practice	3 cr.
	(180 hrs.)
Machine transcription	3 cr.
Physical education	1 cr.
	17 cr.

Summer Session:

Students could take one 3-credit course in general education during summer session; 10 to 12 weeks of supervised practice (6 hours per day for 30 hours per week); 60 hours of directed practice equals 1 semester credit.

(10 weeks = 30 hours per week = 300 hours = 5 semester credits)
(12 weeks = 30 hours per week = 360 hours = 6 semester credits)

It is recommended that at least one hour a week during the Summer Session be devoted to a seminar with the MRT program coordinator.

TWO-YEAR PROGRAM

First Semester	
English	3 cr.
Anatomy and physiology	4 cr.
Medical terminology	3 cr.
Introduction to M.R. science	
lecture	2 cr.
laboratory	1 cr.
	(30 hrs.)
Typing, secretarial practice or electives	3 cr.
Physical education	1 cr.
	17 cr.

Second Semester	
English	3 cr.
Anatomy and physiology	4 cr.
Machine transcription	3 cr.
Medical record science	
lecture	2 cr.
laboratory	1 cr.
	(30 hrs.)
directed practice	2 cr.
	(120 hrs.)
Physical education	1 cr.
	16 cr.

Third Semester	
Medical record science	
lecture	2 cr.
laboratory	1 cr.
	(30 hrs.)
directed practice	3 cr.
	(180 hrs.)
Psychology	3 cr.
Mathematics	2 cr.
Electives	4 cr.
Physical education	1 cr.
	16 cr.

Fourth Semester	
Medical record science	
seminar	1 cr.
directed practice	4 cr.
	(240 hrs.)
Sociology	3 cr.
History	3 cr.
Speech	2 cr.
Physical education	1 cr.
Electives	2 cr.
	16 cr.

FIGURE TWO

FULLERTON JUNIOR COLLEGE
FULLERTON, CALIFORNIA

MEDICAL RECORD TECHNOLOGY PROGRAM

PREREQUISITES: Graduation from high school; biology and general mathematics background.

Prepares for employment as a medical record technician in medical record departments of public and private hospitals, clinics, public health departments. Open to men and women. A two-year program leading to the A.A. Degree. Graduates are eligible to take the National Accreditation Examination given by the American Association of Medical Record Librarians, for designation ART (accredited record technician).

FRESHMAN YEAR

First Semester		*Second Semester*	
Physical education	½ cr.	Physical education	½ cr.
Medical record science 75A	3 cr.	Medical record science 75B	3 cr.
Typing 3A	3 cr.	Typing 3B	3 cr.
Medical terminology 65A	3 cr.	Anatomy and physiology 16	5 cr.
English 1A	3 cr.	History 27	3 cr.
Personal health	2 cr.	Elective*	3 cr.
Careers in life science	½ cr.		
American government survey 5	2 cr.		
	17 cr.	*English encouraged.	17½ cr.

SOPHOMORE YEAR

Third Semester		*Fourth Semester*	
Physical education	½cr.	Physical education	½ cr.
Machine transcription (Medical) 65	2 cr.	Psychology 3	3 cr.
Elective	3 cr.	Elective	3 cr.
Cooperative medical record Training 78A*	10 cr.	Cooperative medical record Training 78B*	10 cr.
	15½ cr.		16½ cr.

Recommended electives: Medical terminology 65B
Introduction to data processing 2

*19 hours per week, one campus session once a month.

FIGURE THREE

EAST LOS ANGELES COLLEGE
LOS ANGELES, CALIFORNIA

MEDICAL RECORD TECHNICIAN
Occupational Curriculum

FIRST YEAR

Alpha Semester	*Units*	*Beta Semester*	*Units*
Anatomy I	3	Biology 33	3
English I or 28	3	Medical record science 3	2
Health II	3	Medical record science 4	3
Medical record science I	2	Microbiology 6	2
Medical record science 2	1	Physiology I	3
Medical record science 6	1	Physical education	½
Secretarial science I or 2	2	Elective	2
Physical education	½		
	15½		

SUMMER SESSION	
Medical Record Science 20	5

SECOND YEAR

Gamma Semester	*Units*	*Delta Semester*	*Units*
Medical record science 20	5	History 14	3
Political science I	3	Medical record science 20	5
Psychology I or 6	3	Speech I	3
Secretarial science 32	3	*Electives	4
*Elective	2	Physical education	½
Physical education	½		
	16½		15½

*Recommended electives include Psychology 3 and management 31

FIGURE FOUR

ST. MARY'S JUNIOR COLLEGE
MINNEAPOLIS, MINNESOTA

MEDICAL RECORD TECHNICIAN PROGRAM

FRESHMAN YEAR

Fall		*Winter*		*Spring*	
Anatomy and physiology	3	Anatomy and physiology	3	Medical legal relationships	3
Health concepts	3	Medical record science	6	Man in society	3
English	3	Medical machine Transcription	3	Religion	3
Medical terminology	3			Medical record science	6
Medical record science (includes 1 credit typewriting)	4				

SOPHOMORE YEAR

Fall		*Winter*		*Spring*	
Humanities	3	Humanities	3	Humanities	3
Moral theology	3	Religion	3	Elective	3
General psychology	3	Elective	3	Elective	3
Medical record science	6	Medical record science	6	Medical record science	6

NOTE: General education core curriculum: 39 credits
Program required courses: 43 credits

Electives: 8 credits

Graduation requirement: 90 quarter credits

Laboratory hours – 2 clock hours = 1 quarter credit
Directed practice – 4 clock hours = 1 quarter credit

Hospital affiliation with accredited hospitals, where students may obtain practice on the job, under the competent supervision of registered medical record librarians, is essential to the medical record technician program.

The Role of Junior Colleges in Educational Programs in Radiologic Technology*

During the past decade there has been an unprecedented increase in the number of junior college programs in the country; these having tripled since 1957. Soon there will be over 1,100 junior colleges. Many of these are also increasing in size of student enrollment, especially in certain areas of the country in which the population is expanding rapidly. One example is Dade County Junior College in Miami, Florida, which in 1967 had nearly 14,000 students, but which anticipates quadrupling its enrollment within the next ten years.

Understandably, many of these schools are becoming heavily involved with career or occupational programs in the allied health fields such as nursing, physical therapy and rehabilitation, medical and radiologic technology, as well as other paramedical fields. At the same time, hospitals, which historically have produced, largely at their own expense, most of the workers in these fields have been faced with escalating costs of rendering patient care. Persuasive evidence is being presented that educational programs, especially in nursing and to a lesser extent in the technological fields allied to medicine, should be the responsibility of colleges and universities, and should be supported by public and private funds not by the patient's dollar.

Hospitalization insurance agencies are taking a similar stand and at least one legal action is pending in which a hospital is suing Blue Cross for payments withheld because the insurance carrier claimed that part of the payment requested by the hospital was used to support educational programs, not directly related to patient care.

In the field of radiologic technology, the problem has been compounded by the increasing demand for radiologic services and by the complexity and amount of time consumed by many of the examinations. These factors, together with the realization by radiologists, radiation physicists, radiobiologists, and public health officials that protection of patients and their progeny from possible hazards of unnecessary radiation emphasize the need for providing adequate educational programs for workers who are administering radiation to patients. Radiologic technologists administer most of the radiation used in hospital and medical practice today with the exception of fluoroscopy, radiation therapy, and certain nuclear medical procedures.

Almost all of the formally trained technologists are produced by the 1,200 hospital based schools accredited by the Council on Medical Education of the American Medical Association. These schools provide courses 24 or more months in length, more than 90 per cent of which are terminal, without college affiliation, and with no college credit given for courses offered. In 1967, the AMA approved schools turned out 5,400 graduates. At the same time there were less than one hundred technologists who received associate degrees, and about a dozen who received bachelor's degrees.

According to the best information now available, there are approximately sixty colleges and universities (mostly community or junior colleges) offering associate degree programs, and a dozen or less which have developed or are developing baccalaureate degree programs in radiologic technology. The hospital-based programs have been especially appealing to young people from low income families that cannot afford to send their children to college. In order not to lose this pool of promising workers, it is imperative that as more junior college programs in radiologic technology are developed, ways and means be found of keeping tuition charges to a minimum and providing scholarships and loan funds for needy students.

In a few states the junior colleges are sufficiently subsidized so that students may go from high school into college with minimal financial commitment. Many, however,

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**A. Bradley Soule, chairman of the Department of Radiology, College of Medicine, University of Vermont, Burlington, Vermont.*

require an investment of several thousand dollars or more for a two-year program. The professionals in the field of radiology and radiologic technology believe that the most promising sources of staff technologists in the foreseeable future are the hospital-based schools, since they are now providing 98 per cent of current graduates.

It is hoped, however, that the college-affiliated programs will produce more and more of the radiologic technologists of the future, especially if hospitals tend to drop out of the educational field. This is still an unproven hypothesis, and there is a calculated risk that increased costs to prospective students and drop-outs while in training may offer a real threat to the success of this venture.

The Department of Labor and the Bureau of Health Manpower of the Public Health Service have recently issued reports in which they note that there are approximately 72,000 people operating x-ray equipment in this country, of which 33,000 are qualified registered technologists. The Department estimated that by 1975 there will be a need for 100,000 technologists, of whom at least 52,000 will or should be fully trained. The number of AMA-approved schools increased from 456 to 1,200 in the last decade, with a corresponding increase in training capacity from 3,600 to 14,000, and increase in number of graduates from 1,800 to 5,400.

Unfortunately there is a high attrition rate, primarily due to marriage of female technologists who spend an average of 3½ years in the field, this including their training period. The relatively low salary scale and the paucity of opportunities for advancement have tended to attract relatively few men, and a number of male technologists have left for more remunerative positions in commerce and industry. Since most males entering the field do so with the expectation of making a lifetime career of radiologic technology, the majority remain. It has been estimated that well over half of the administrative and chief technologist positions in the country are filled by men.

Certainly one of the real needs is for development of middle management positions and for teachers who are also in exceedingly short supply. General duty technologists receive salaries which are usually equated to other comparable staff workers in hospitals, but there seem to be increasing opportunities for advancement in rank and responsibilities with corresponding increases in salaries and prerequisites. The junior colleges should play a significant role in the development of the higher echelon types of technologists in providing them with a general basic education — one that will permit talented young people to move on up the educational ladder.

Equivalency tests are being developed which should enable qualified technologists already in the field to obtain college credits for knowledge acquired in their schooling and employment. Northeastern University has developed an interesting plan, whereby technologists employed in the Boston area may take evening courses which will lead over a period of several years to the granting of an associate degree.

While the need is greatest for technologists in the field of diagnostic x-ray, there is also an increasing demand for technologists in radiation therapy and nuclear medicine; and for such specialized workers as radiologists' assistants, special procedures technologists, administrative assistants, electronics and engineering technologists. Colleges and universities will undoubtedly play a leading role in development of many of these specialists, but of necessity with the collaboration of the staffs of clinical radiology departments.

The Council on Medical Education of the American Medical Association is charged with the responsibility for granting approval of programs of instruction in radiologic technology. They establish standards of training which are expressed in the *Essentials of an Approved School of Radiologic Technology,* copies of which may be obtained from the Council's office. The *Essentials* outline the Council's requirements for administration, organization, faculty, admission requirements, curriculum, ethics, etc., for qualification as an approved school. Recently, the American Medical Association has created a Department of Allied Medical Professions and Services within the Division of Medical Education. This new department will supervise the broad field of educational programs in the paramedical areas.

The American College of Radiology, through its Commission on Technologist Affairs, assists the AMA Council by keeping under constant study the changing needs in the field of radiologic technology, and by conducting survey inspections of schools of radiologic technology to evaluate such schools and make recommendations regarding approval of their programs. The Commission has developed a Committee on Technologist Training, a Committee on College Affiliated Training, a Committee on Training in Nuclear Medicine Technology, and a Committee on Training in Radiation Therapy Technology, all of which act as study committees in their fields. The Committee on Technologist Training, which includes both radiologists and technologists, handles the details of the survey inspections.

The American Society of Radiologic Technologists, acting largely through its Education Committee, also keeps under surveillance educational needs and advises the College and AMA Council regarding desired goals, standards, details of curriculum, etc.

The American Registry of Radiologic Technologists, an independent agency which derives its membership from radiologists appointed by the American College of Radiology and from technologists named by the American Society, conducts a program of examination and certification of qualified graduates of approved schools. Since its organization, the Registry has certified qualified candidates in general radiologic technology; in 1962 they added certification in radiation therapy technology and in nuclear medicine technology. Since July 1, 1966, the Registry has allowed only those candidates who have successfully completed 24 or more months in an AMA spproved training program to take the examinations in radiologic technology.

Recently developed are the *Essentials for An Approved School of Technologists in Radiation Therapy*, which provide guidelines and requirements for training of technologists in this area.

The field of nuclear medicine technology engages the interest of not only the radiologic groups but also crosses speciality lines so that in the planning of educational programs for technologists in this relatively new field, the American Society of Clinical Pathologists, the Society of Nuclear Medicine, the American Society of Medical Technologists, the American College of Radiology, and the American Society of Radiologic Technologists are equally concerned. It is anticipated that there will soon be an *Essentials of an Acceptable School for Nuclear Medical Technicians and Technologists* developed by the AMA Council which will utilize a Board of Schools made up of representatives of all of the above listed organizations to assist the Council in survey inspections and evaluation of schools of nuclear medicine technology. Under consideration are two general types of programs – one which may or may not lead to an associate degree for "technicians" and one which leads to a baccalaureate degree for "technologists." Currently, registered radiologic or medical technologists may enroll in a course in nuclear medical technology of twelve or more months in length, and may, if their qualifications are acceptable to the Registry Boards, receive additional certification in nuclear medical technology. Certification may be granted by either the American Registry of Radiologic Technologists or the American Society of Clinical Pathologists through its Commission on Medical Technology. Under study is an additional type of training under which nuclear medical technologists may be developed directly without prior training in radiologic or medical technology. Minimal standards have not as yet been formalized for this new program, but it is anticipated that criteria quite similar to those for radiologic technology will be developed.

The AMA Council will only approve schools which are organized in colleges of medicine or in radiology departments affiliated with accredited general hospitals. Under consideration is a revision which, if adopted, will provide for the development of schools in specialty hospitals or in educational facilities other than those named above which have demonstrated capabilities of providing suitable training in radiologic technology.

Thus, it is essential that, in the development of a college affiliated program, the hospital school or schools must apply to the AMA Council on Medical Education for approval, naming the college as the affiliate. Both the hospital school or schools and the college shall be held to the required standards. Provisional approval may be granted to the combined school program without an on-site survey if the program appears to meet all of the requirements of the AMA Council. Survey inspections of the college and hospital programs will be conducted by a team representing the ACR Committee on Technologist Training in not less than one year nor more than two years after provisional approval has been granted.

The organization and operation of the school of radiologic technology shall be the joint responsibility of the college and of the radiology department or departments of the cooperating hospital or hospitals. The school may carry the names of all affiliated organizations if desired.

Each hospital shall be fully accredited by the Joint Commission on Accreditation and the radiology department must provide a wide variety and a reasonable volume of radiologic procedures. If the department is unable to offer acceptable experience in specialized procedures and/or in radiation therapy, affiliation shall be established with an institution providing such experience. At least 2,400 hours of hospital-based practicum shall be provided. Time used in work on phantoms and other inanimate objects shall not be granted credit toward the 2,400 hours of the practicum.

A qualified radiologist shall be responsible for the organization and conduct of the School of Radiologic Technology. This will require staff appointment at the college and full time or nearly full time appointment at the hospital. Should more than one hospital be affiliated in the program, it may be necessary or advisable for a radiologist to be appointed for each hospital. In such a case, the radiologists should comprise a committee which oversees the entire program.

A full-time qualified radiologic technologist shall be on the staff of the College, who will work in cooperation with the affiliated hospital or hospitals to coordinate the entire program in all institutions involved.

It is the responsibility of the colleges and universities to develop and teach some of the courses in the technical field and all of the additional courses required for the granting of degrees. Teaching of the so-called radiologic technology courses will depend on the availability and competency of college faculty to develop and present them so that they will be most meaningful to the student. In some cases this can be done entirely within the college, but usually courses will require supplementation by individual and small group instruction in the hospital radiology department schools. The latter will, of course, function as the clinical laboratories for the pracitum where students have an opportunity of working with patients. Since students must develop skills in handling seriously ill and injured patients and in performing all types of radiologic examinations, including a number which are quite complex, the hospital experience must extend over a period long enough for such skills to be acquired.

It is currently required that training in both the hospital-based and the college-affiliated schools extend over a total period of not less than 24 months. In the college affiliated programs granting associate degrees, it is rarely possible to develop a well-rounded experience in less than 27 to 36 months. It has long been the impression of the professional study groups (radiologists and technologists) that at least 2,400 hours should be devoted to the practicum in a hospital environment and that this is a minimum requirement for college affiliated schools. In the hospital-based terminal programs, it actually approaches 3,600 hours.

In developing a program with a junior college, a wide range of operating details is possible. A common pattern is one in which a student attends the college for 4 semesters, this being followed by 15 or more months in the hospital radiology department school. In such a case the hospital school must assume responsibility for the practical training and work experience, including not over two months in the darkroom. The hospital school must also provide at least two hours a week of didactic instruction. Near the close of training, review sessions should be provided either by the hospital school or the college. Film critiques should be conducted at least once a week during the hospital experience.

In another pattern, which is only possible if the college and the hospital are in close proximity, the student spends part of his time in the college and part in the hospital throughout the training period. There are variants of both of these basic plans. Certain guidelines have been established to assist in the development of an integrated plan for conduct of the school. Because of the many individual variations in program operation, it is necessary that each be evaluated on its own merits. The committee on Technologist Training recognizes that, while there must be room for individual differences in the method of operation, all programs must function at or in excess of certain minimum standards. These standards or guidelines have been imposed after careful thought to fulfill a twofold purpose: first, to provide a channel for schools to follow in completing objectives favorable to the profession; and, second, to provide a means for responsible control of the quality of technologists produced and their performance in the profession.

The objective in all programs must be to provide an educational experience of sound academic value balanced between theory and practice. The combined affiliated program must be so organized and integrated as to accomplish this objective.

Directors of schools are therefore urged to offer courses that will meet all requirements for an associate degree, and will also provide on a college level the technical courses outlined in the AMA Basic Minimum Curriculum. Time should be allowed for study, recreation, holidays, and vacations. The program must include didactic and applied training in radiologic technology adequate in course content and in length, breadth, and depth of clinical experience sufficient to fully prepare the student for a professional career in this field. Not over 40 hours per week should be devoted to the practicum.

The course material and practicum must be designed to insure that graduates are qualified for registration by the American Registry of Radiologic Technologists. Selection of students for the school shall be the joint responsibility of the college and hospital or hospitals. Efforts should be made to recruit students who show an aptitude for radiologic technology, and who have desirable traits of character, personality, and intelligence. Unpromising applicants should be discouraged. Aptitude tests, relative class standing in secondary schools, references, and personal interviews should be used in evaluation of candidates.

All didactic courses, whether provided by the college or hospital, should be of college credit quality. These shall include courses required in the AMA Basic Minimum Curriculum or those of equivalent content. The college is encouraged to offer background courses in subjects designed to prepare graduates for teaching and supervisory positions in radiologic technology. If all of the required courses are not taught in the college, the remainder must be given in the hospital school.

The subject material of courses to be taught should follow the outline in the *Teacher's Syllabus*, published by the American Society of Radiologic Technologists, except that this may be varied by instructors to provide each student with a well rounded background in the science and art of radiologic technology.

Careful attention shall be paid to the organization of the practicum which will be provided in the hospital radiology department. This should provide a meaningful educational experience. Students must be given thorough instruction in the operation of equipment and in the handling of all patients, especially the seriously sick and injured, before being permitted to perform such examinations. They shall practice first under close supervision, then under general supervision, and finally unaided. Each student must be taught the principles and application of radiation safety and of general safety. The student shall not be permitted to perform an x-ray examination until this can be done with safety to the patient and to the personnel in the department. Practical experience should not include excessive time in duties which involve a minimum of learning, such as darkroom work, filing, typing, transportation of patients, etc.

Each student shall be provided with a workbook wherein are recorded procedures which the student performs. Before graduation, each student shall be required to perform a suitable number of examinations in multiple categories, at least one third of which shall have been made unaided.

The school shall not permit those students to graduate or to be certified as eligible for registration by the American Registry of Radiologic Technology who have failed to complete satisfactorily courses listed in the "Basic Minimum Curriculum." The radiologist directing the program shall certify each student candidate for graduation as being technically competent in order for the student to be graduated. Records of students' activities and accomplishments must be complete and readily available for inspection teams when they come to appraise the educational program.

The Committee on Technologist Training and the Committee on College Affiliated Programs welcome inquiries from radiologists directing hospital departments of radiology and from administrative officers of colleges and universities regarding projected programs in radiologic technology; and will gladly furnish advice and help in organizing affiliated schools. Inquiries should be directed to the American College of Radiology, 20 North Wacker Drive, Chicago, Illinois 60606, or to the Council on Medical Education, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

Information regarding registration of radiologic technologists may be obtained from the American Registry of Radiologic Technologists, 2600 Wayzata Boulevard, Minneapolis, Minnesota 55455.

Copies of the *Teacher's Syllabus* and *Basic Minimum Curriculum* may be obtained for $3.50 postpaid from the Executive Secretary, American Society of Radiologic Technologists, 537 South Main Street, Fond du Lac, Wisconsin 54935.

A Proposed Interrelated Dental Auxiliary Personnel Curriculum*

The report of the National Advisory Commission on Health Manpower calculates that demand for dental services will increase 100 to 125 per cent in the period of 1965-1975. The trend of a substantial increasing ratio of auxiliary dental personnel to active practicing dentists is noteworthy. The report also states "The development of health personnel at the intermediate professional level has been repeatedly explored, and a few pilot programs are now underway. Because we regard the use of such personnel as a major factor in improving the utilization of health professionals, we recommend that the Federal Government give high priority to the support under university direction of experimental programs which train and utilize new categories of health professionals." Another recommendation that might provide guidance is "Professional societies, universities, and state governments should undertake, with Federal support, studies on the development of guidelines for state licensure codes for health personnel. Licensure throughout the nation should be based on minimum requirements which would assure to citizens a basic standard of quality . . . ."

The American College of Dentists dental manpower conference sponsored by U.S.P.H.S. was held in St. Louis on December 13-18, 1967. Study group II whose topic was "Increasing Productivity" recommended specific measures – several of these were:

1. To provide legal opportunity for expansion of duties and functions of auxiliaries

2. To extend duties without undue harm to the patient's health

3. To provide a responsible body of the dental profession such as the State Board of Dental Examiners to regulate considering regional needs and attitudes. This group should be strongly encouraged to implement experimentation and change in the areas of broadened duties.

4. To expand functions and programs under supervision of responsible dentists, perhaps in the setting of an educational institition.

5. To convince the profession that auxiliary personnel can assume effectively additional responsibilities. Apathy, fear of change as a threat to established "successful" patterns, and lack of awareness of the need are factors related to the professional's resistance. One recommended proposal was that editorials supporting expanded functions be directed to the profession through journals.

Junior and community colleges can be employed in expanding present program and developing new programs to educate auxiliaries. They can serve as models for development of optimal auxiliary utilization. Cooperative action with adjacent university dental schools is to the advantage of all parties involved. The Forest Park Community College Dental Clinic has been designed to provide opportunity for the students to have experiences in delivery of services in a manner which has been shown to increase both quantity and quality. The emphasis in the teaching program will be directed toward prevention of dental disease rather than correction of symptoms.

Experimental programs indicate that another ancillary career will become part of the dental health team. Some of the important considerations in the establishment of this new career follows:

1. The acceptance of the dental profession of this new auxiliary in the dental health team

2. The acceptance of the new auxiliary by the present dental auxiliary group

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**Frederic Custer, director, Dental Programs, Forest Park Community College, St. Louis, Missouri.*

3. The control of new auxiliary by the dental profession to assure high quality service

4. The designation and limitation of the duties of the new auxiliary

5. Establishment of educational programs related to the designated responsibilities.

6. The provision of direction and teaching manpower for new programs through establishment of a group representing the dental profession, dental examiners and educators, both general and dental.

7. The need to provide a continuing increase of dental auxiliaries with a flexible interrelated curriculum resulting in a more effective and economical use of present facilities and manpower.

The thoughts contained in the following recommendations are presented for your evaluation and have been encouraged by the dental profession, examiners and educators have demonstrated. The new auxiliary may be designated as (1) dental hygienist (2) clinical dental technologist (3) clinical technician or (4) dental therapist. The terminology is important here, only in that it provides a common means of communication. *(See flow graph adjoining)*

All individuals pursuing any of the dental auxiliary programs will be exposed to the same educational experiences during the first semester. Both those continuing their specific interest, or those that might have a change in direction through different motivational factors (qualification, economics or varied other reasons), can all have a more satisfactory approach in the second semester. For example, a girl comes to the program for dental hygiene, but for some personal reason cannot continue a future threee semesters plus one summer session schedule. She now has another acceptable choice – continuing in the dental assisting program for just one more semester and then entering into active dental employment where she can function to the advantage of herself and to dental health manpower. If her situation changes, she could then re-enter at the advanced dental technology level to progress to her original objective. Those individuals entering in the dental assisting program need not repeat the complete year, as is now required, but could change their objective without loss of the individual's first year, duplication of the teacher's time, and the doubled use of facilities.

Presently, five of nineteen dental hygiene students at Forest Park have completed the junior college district dental assistant program. The 1968-69 entering class of hygienists will have even a higher percentage of assistants since it might be possible to implement a testing instrument to give qualified, experienced dental assistants credit for the basic dental technology stage. Other statewide junior college dental assisting programs that meet the curriculum requirements of basic dental technology, would have the opportunity to place their motivated students in the advanced program. This matriculation offers broader horizons for recruitment at the high school level, while local identification in the initial phase of their training encourages the trained individuals to return to their original locale.

The proposed curriculum could also provide basically trained students for a dental laboratory technician program. The summer session would be basic clinical experience, clinic orientation, radiography, and other preliminary activities such as preparation of study models, charting, preventive measures and health education. Limited experiences should be offered in dental hygiene prophylactic practice.

In the second-year first-semester program, there would be an emphasis placed on either (1) the dental hygiene areas as presently known (with minor additional curriculum changes, or (2) the clinical dental technologist (the name here is only given to differentiate duties or emphasis.) The overlap between the two areas is apparent and would be advantageous to the profession in acceptance, flexibility, control through licensure, and opportunity for development of the new auxiliary without duplicating an established curriculum. The curriculum of the clinical dental technologist could be guided by the results of projects related to expansion of duties from other institutions, i.e., University of Alabama, School of Dentistry; U.S. Navy Auxiliary Dental Personal Program; University of Louisville, School of Dentistry. Limiting responsibilities would be a function of organized dentistry through a combined committee of individuals from the profession, examiners and educators.

The second semester has less overlap since greater emphasis is in the direction of interest. The student, after satisfactorily completing the curriculum of didactic and clinical experiences, would then be eligible to apply for licensure examination.

The related responsibilities of the present dental hygienist and the future clinical dental technologist is notable. Concern is voiced over the loss of now-practicing dental hygienists wanting to become clinical dental technologists. This program would give flexibility in the development of short postgraduate programs to solve this problem. Initiating new and separated programs would be expensive in facilities and manpower. There would be the two-year-course-time delay from initiation through development until this manpower source became productive.

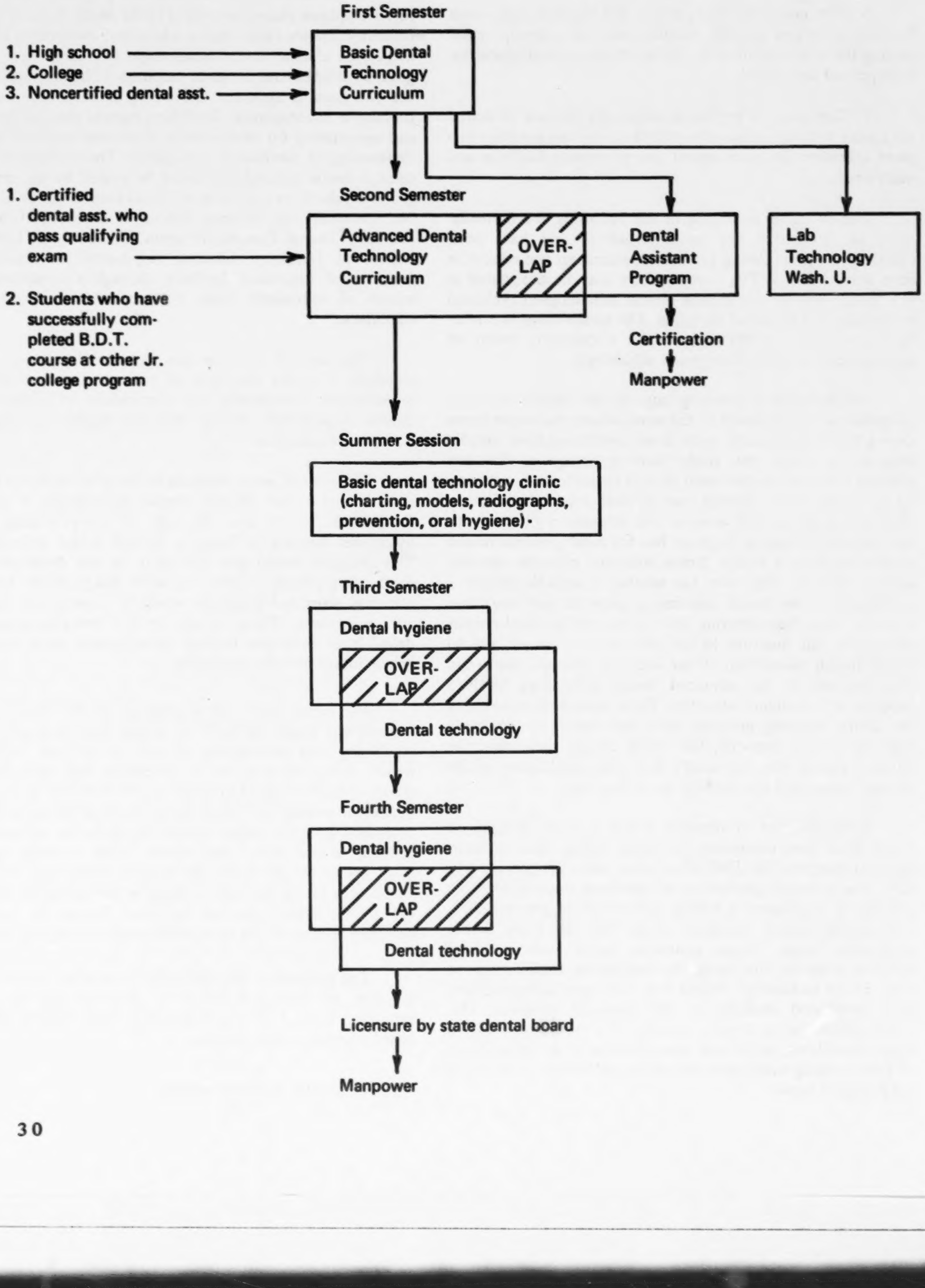
The initial need and acceptance of the clinical dental technologist might be faster or slower than anticipated. The combining and overlapping of the second year curriculum would allow the program to emphasize the need for each group as it develops. Licensure would offer the control over quality of service and direct the educational experiences. The combined program might reduce the difficulty of modifying existing dental laws, and would offer a more versatile employee to the practicing dentist who needs such versatility. The dentist retains the responsibility of dental health service in the office, while organized dentistry directs the future of dentistry to provide the best health care for everyone involved.

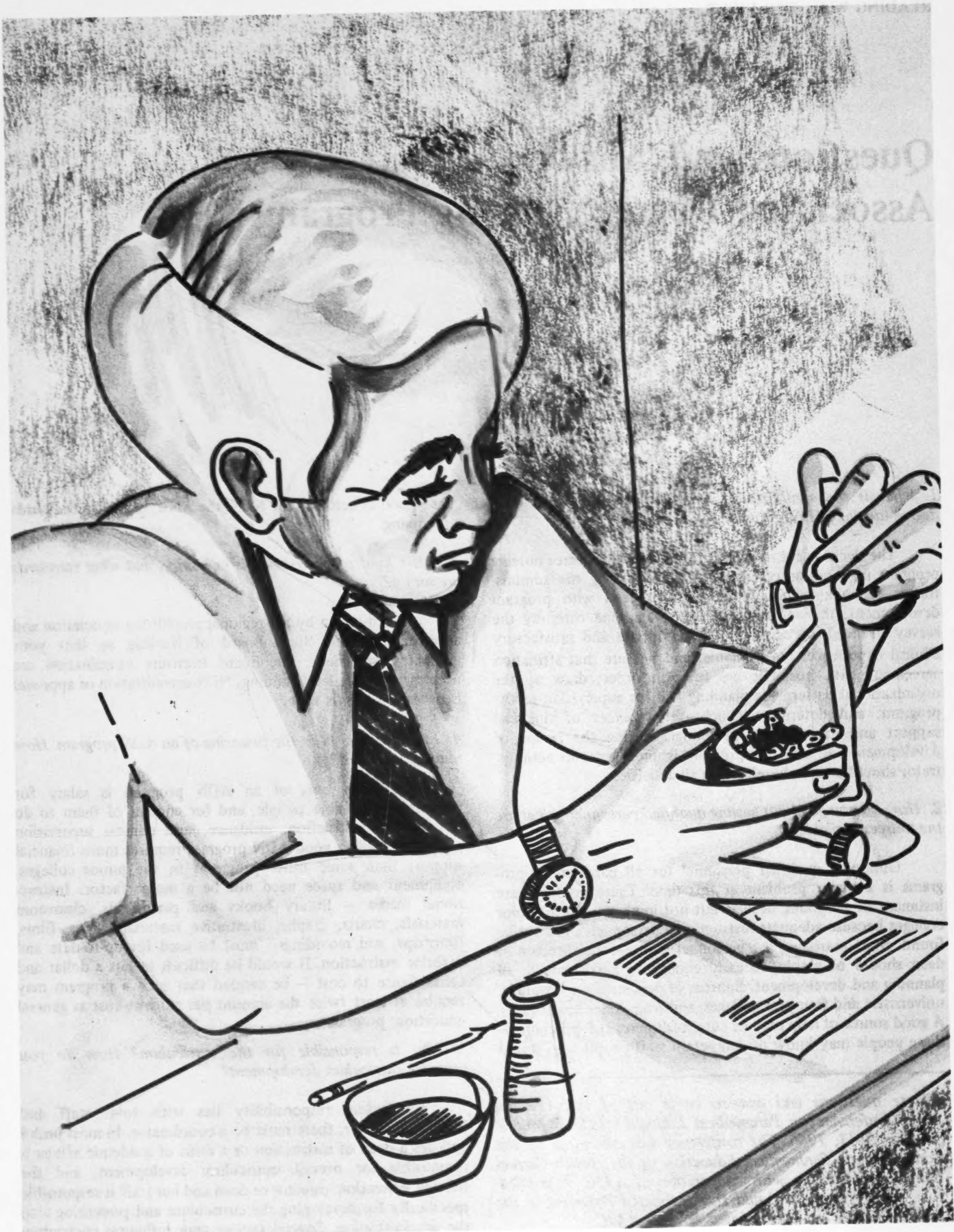
The program I have proposed a solution to the urgent problem of estimated manpower shortage and the future increased demand of dental health services. Finally, the proposed program would provide:

1. Quality in dental services

2. **Control through the profession**
3. **Economizing of educational resources**
4. **Versatility in meeting future practice needs**
5. **Greater acceptance of the new auxiliary by the dental profession and other related auxiliary groups**
6. **Flexibility of existing programs.**

FLOW GRAPH FOR A PROPOSED INTERRELATED DENTAL CURRICULUM FOR DENTAL AUXILIARIES


First Semester
1. High school
2. College
3. Noncertified dental asst.
Basic Dental Technology Curriculum
Second Semester
1. Certified dental asst. who pass qualifying exam
2. Students who have successfully completed B.D.T. course at other Jr. college program
Advanced Dental Technology Curriculum
OVER-LAP
Dental Assistant Program
Lab Technology Wash. U.
Certification
Manpower
Summer Session
Basic dental technology clinic (charting, models, radiographs, prevention, oral hygiene)
Third Semester
Dental hygiene
OVER-LAP
Dental technology
Fourth Semester
Dental hygiene
OVER-LAP
Dental technology
Licensure by state dental board
Manpower



Questions and Answers About Associated Degree Nursing Programs*

1. What is the administrator's role in starting an associate degree nursing (ADN) program?

The decision for inaugurating an associate degree nursing program in a junior college must be made by the administrator. In making his decision to proceed with program development, the administrator must examine carefully the survey of need; be certain that appropriate and satisfactory clinical experiences are available, and be sure that affiliation agreement with hospitals are fully in order; draw up the organizational pattern for planning and for supervision of the program; and determine conclusively sources of financial support and instructional personnel. During the period of development and after the program is underway, the administrator should be closely related to all activities.

2. How do you go about getting qualified personnel? What are the sources available?

Obtaining qualified personnel for all paramedical programs is a major problem at this time. There probably are instances of programs needed but not implemented in junior colleges because adequate instructional personnel could not be found. Start searching for personnel early – the director or dean should be employed early enough to participate in all planning and development. Sources of personnel are hospitals, universities and four-year colleges, and from other institutions. A good source of help may be current directors of programs – these people may know of competent staff people who would make good directors – the NLN, the ANA, or the State Boards of Nursing.

3. What kind of accrediting is necessary, and what standards are set up?

Accreditation by the regional accrediting association and approval of your State Board of Nursing so that your graduates may take the Board licensure examination are necessary. For federal funding, NLN accreditation or approval is necessary at this time.

4. Please discuss fully the financing of an ADN program. How much does it cost?

The main cost of an ADN program is salary for competent and able people, and for enough of them to do the job of instruction, guidance, and clinical supervision properly. While a good ADN program requires more financial support than some other programs in the junior colleges, equipment and space need not be a major factor. Instructional media – library books and periodicals, classroom materials, charts, graphs, illustrative material, slides, films, filmstrips, and recordings– must be used for up-to-date and superior instruction. It would be difficult to put a dollar and cents figure to cost – be assured that such a program may require at least twice the amount per student cost as general education programs.

5. Who is responsible for the curriculum? How do you organize curriculum development?

Curriculum responsibility lies with total staff and faculty. However, there must be a coordinator. In most junior colleges a dean of instruction or a dean of academic affairs is responsible for overall curriculum development, and the nursing education director or dean and her staff is responsible specifically for developing the curriculum and presenting it to the administration. Several factors may influence curriculum

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**These questions and answers came out of the Alabama State Conference on Paramedical Education held at Mobile on May 10-11, 1966. The conference was sponsored by the Committee on Paramedical Education of the Health Careers Council of Alabama with cooperation of AAJC. A publication, titled Paramedical and Health-Related Programs in the Junior College, was later printed through AAJC.*

development: (1) state board of nursing requirements; (2) state department of education requirements; (3) the profession's requirements for adequate and satisfactory teaching programs; (4) the college-philosophy requirements of objectives and goals; (5) proven programs of other institutions; (6) local planning factors.

6. Who does the college administration appoint to organize recruitment of students for these programs – the ADN program especially? What are the sources of students?

There are several sources of students for paramedical programs – but all require various degrees of *active* recruitment. The college that develops a program and then sits back with doors open waiting for students to come in is doomed to disappointment and frustration. Our largest source of students is the high school graduate – but again, the junior college that depends wholly upon high school graduates for its students in health-related programs will experience enrollment disappointment. All sources should be explored and, yes, exploited. Current college students who have been misdirected into other programs, or who have entered programs through false or misunderstood objectives, or who, for many reasons, may be frustrated in their college work, may be recounseled into the paramedical programs. Adults who now wish to or find the need to engage in a career may be motivated into programs. Adults who practiced a health profession years ago, and who now wish to re-enter the profession, may need much refresher work. Adults currently in a health-related career who wish to move into another field or upgrade themselves in their present employment may be interested. However, we emphasize that in order to attract students from any of these categories into the paramedical programs, a dynamic, aggressive, well-planned program of information, encouragement, and counseling must be undertaken.

7. How do you determine the need for the ADN program in the first place?

Need for paramedical programs should be determined by well-planned surveys in the areas to be served. The survey should concentrate on the users of the product of the proposed program. A survey, based upon a printed questionnaire distributed through the mail with requests for written replies is not effective and frequently may also be inaccurate. The basic question really is not how many people are needed, but how many people will be employed – a different approach altogether. A hospital may need fifty more nurses a year, but its budget may permit it to employ only ten. The written-answer survey as a part of a survey may be useful. The procedures may be suggested as follows:

Personal conferences with selected *key* people in the profession in the community. An informational campaign by newspaper, speeches to clubs and other organizations, TV stations and radio, to acquaint people of the community with what the junior college can do in organizing programs and offering them. A broadened personal interview list to see what the reaction of the professional "rank and file" might be to such program development. Conferences with officials of other levels of the local school system to enlist their support. A review of similar surveys or reports based upon state, regional, or national surveys.

8. Should administrators of small junior colleges – less than a thousand students – plan to develop an ADN program, or any other paramedical program? What should guide them in their decisions?

Generally, they should consider thoroughly and wisely all the problems attendant upon paramedical programs before proceeding with development. A small junior college usually indicates a small or scattered population area, and this in itself may be deterrent to a successful program. Administrators of small junior colleges should examine carefully cost, student resource, and placement opportunities for graduates before starting such programs.

9. What facility arrangements must be made for ADN programs on the campus? At what hospital? What do you think about the "extended campus" plan where much of the teaching is done off campus?

Visits to many junior college campuses have shown a variety of physical facilities for ADN programs, and for other paramedical offerings. Some colleges have accomplished minor remodeling of current spaces to provide very functional and satisfactory facilities for the health programs. Other colleges have constructed well-planned new facilities in new buildings or wings of present buildings.

Whatever is done, facilities should not be cramped – plan adequately for the program or not at all. Also, it should be remembered that the educational programs in the health areas represent an occupation that must emphasize environment, and students should be aware of this from the beginning. Thus facilities should be ample for the job to be done, pleasant, cheerful, light, and well-ventilated. Another consideration is a careful study of the possible use of facilities also being used by other programs of the college – laboratories, classrooms, audiovisual auditoriums and the like. Some special facilities will be needed, and these should be planned as an outcome of the curriculum being developed and the objectives of the course.

Facilities for use at the hospital are usually defined in the agreement mutually prepared by the college and the hospital. It has been recommended that facilities at the hospital be used as such are available, and if they provide better teaching media than can be found at the college. Experience has indicated, however, that college controlled facilities should be used as much as is possible.

This, of course, brings us to the matter of the "extended" campus. It is not at all the characteristic of the "extended" campus for the college to give up its control and supervision of facilities used away from the main campus . . . rather it is implied by the "extended" campus that there is nothing magic in having all instruction on one physical location or "campus". A good community junior college may very well regard the community or the area as its campus, and facilities may be used wherever they provide the kind of teaching environment and climate conducive to best instructional practices.

10. In beginning ADN programs, what is the very first "move" of the administrator?

First, to determine real need; second, to determine support from the professions, the community, and from facilities.

11. How do you satisfactorily establish clinical and bedside experience opportunities for ADN students with the hospitals? What are the problems? How are schedules made up? Will you please tell us what you believe a good contact with the hospital would be? What are special things to which we should be alerted?

Yes, of course there are problems . . . there always are when several institutions of varying characteristics, policies, and procedures get togther. However, the problems thus raised can be solved through mutual and open communication and a real effort to understand each other's characteristics and qualities. The college must understand that the first job of a hospital is to provide services, either normally or under emergency conditions. The hospital schedule and policies must be accepted and understood. The hospital in turn must accept that it is providing services to a collegiate institution, and the control, supervision, and policies of the college must be observed. The people using the clinical facilities are college students, and they are responsible only to college officials and staff. The supervisor is a member of the college faculty, and is responsible to the college administration, and not to the hospital. With these understandings and acceptance, most other problems are easy to solve.

12. What qualifications should a good director of ADN programs have? Where do we find these people? Could you say something about salaries?

A good director of ADN programs hopefully should have had a successful background of "practice" experience, if possible in several kinds of environments; should be well founded in the knowledge areas of the field, a proven record of competency and skill; some knowledge of the educational world, its procedures, activities, and developments, a knowledge of the most current devices of instruction, a forward looking philosophy, a tendency to develop innovative practices and procedures, but a maturity that will allow their sound evaluation, a "practical" approach to the profession and to its education and training, skill to work with people as a good administrator, and a sense of public relations. A person with a master's degree as a minimum is usually required.

Where would we find such a paragon? Universities and four-year colleges with programs for preparing such people, hospitals, clinics, laboratories, private practice, and in other institutions. After all, we cannot ignore that junior colleges and other educational institutions are competitive among themselves.

No, a general statement concerning salaries could not be made in fairness. Salary levels differ widely from one part of the country to another, depending somewhat upon cost of living, size of city or area, and local factors. It can safely be said that such people as described above are usually in the higher brackets of the college salary scale.

13. What are major problems to be overcome in securing good instructors in paramedical programs? Specifically in the ADN program?

The major problems facing the junior colleges in securing good instructional personnel for the paramedical programs, and this includes the ADN program, is finding competent, experienced people with teaching abilities and an orientation to education, and second, the salaries offered.

A Profile of Accredited Associate Degree Nursing Programs*

In recent years, the entire health field has been involved in tremendous ferment. The forces initiating these changes have come from many segments of our society. Recent socioeconomic developments which have direct implications for nursing include the population increase, increased longevity, scientific discoveries, and changes in the public's expectations of the health professions; at the same time, the field is experiencing a severe shortage of nurses.

As a result of the Cadet Nurse Corps Training Program of the 1940's, many advocated a shortened and revised basic nursing education program. In 1952 the first program leading to an associate degree in nursing was started in Michigan under the direction of Mildred Montag. By December 1967 there were 286 such nursing programs in the United States and territories. They are found in all geographical areas, with especially large concentrations in New York, California, and Florida.

The associate degree is the most rapidly developing program in nursing education. The movement is stimulated by the recommendation of the the American Nurses Association that the preparation of both the professional nurse and the technical nurse take place in institutions of higher learning; the increasing interest in technical education in colleges and universities; and the tremendous growth of the junior college movement.

NEED FOR STUDY

In 1962 the Department of Diploma and Associate Degree Programs in Nursing of the National League for Nursing approved criteria to be used in evaluating such programs for national accreditation. As of October 1, 1967, only thirty-two of the 260 known associate degree programs in nursing had received national accreditation from the N.L.N. One hundred and twenty-two had received "reasonable assurance of accreditation," a preliminary step toward full national accreditation, but 106 of the programs had not had any kind of national evaluation. This is in spite of the fact that many of them had been in operation a sufficient length of time to qualify for evaluation.

There has been, and still is, the feeling in certain areas of the country that specialized accreditation of one segment of a junior college's curriculum is not needed as long as the institution is accredited by its regional accrediting association; thus, nursing programs in institutions with this philosophy do not apply for national accreditation by the N.L.N. The league has also had a shortage of qualified people for accreditation visits. As a result there is no overall picture available giving the characteristics of these programs in general – systematically gathered data are missing.

The purpose of this article is to give a profile of associate degree programs in nursing which are accredited by the National League for Nursing, the recognized accrediting body.

A letter was sent to thirty-two programs, requesting information concerning such areas as control and type of institution, institutional accreditation, length of programs, degree awarded, tuition charges, entrance requirements, academic areas included in the programs, and the specific number of hours required in each academic area. Out of the thirty-two programs polled, thirty-one answered – a response of 96.8 per cent.

All data in this paper are based on the response of thirty-one of the thirty-two programs, unless otherwise stated.

Of the thirty-two programs, sixteen are located in four states: seven in New York, four in California, three in Indiana, and two in Colorado. Fifteen states each have one program, as

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Reprinted from the Junior College Journal, March 1969. Written by Virginia Barker, dean, School of Nursing, Alfred University, Alfred, New York.

does the Territory of Puerto Rico. Thirty-one states do not have programs accredited by the N.L.N. as of October 1, 1967.

All of the schools were accredited by their regional accrediting associations. Table I shows the number of schools accredited by the various agencies. All six of the regional accrediting bodies are represented.

TABLE I
REGIONAL ACCREDITATION OF INSTITUTIONS WITH PROGRAMS IN NURSING LEADING TO AN ASSOCIATE DEGREE

Regional body	*Number of institutions*
Middle States Association of Secondary Schools and Colleges	10
New England Association of Colleges and Secondary Schools	1
North Central Association of Colleges and Secondary Schools	1
Northwestern Association of Secondary and Higher Schools	1
Southern Regional Association of Colleges and Secondary Schools	3
Western Association of Schools and Colleges	5
Total	31

Table II shows that the majority of the nursing programs are located in two-year public institutions. All but two of the programs are coeducational. It is interesting to note that 35.4 per cent of the programs are found in four-year institutions.

TABLE II
CONTROL AND TYPE OF INSTITUTIONS WITH PROGRAMS IN NURSING LEADING TO AN ASSOCIATE DEGREE

Control	*Two-year*	*Four-year*	*Total*
Public	16	7	23
Private	4	4	8
Total	20	11	31

The length of the programs varies from eighteen to twenty-two months. Twenty-three of the programs are either eighteen or twenty months in length as is shown in Table III. This is considerably less time than the diploma programs (thirty-three months) or the baccalaureate programs (thirty-six months). Even the 25.8 per cent which are twenty-two months in length are still eleven months shorter than the diploma programs.

TABLE III
LENGTH OF PROGRAMS IN NURSING LEADING TO AN ASSOCIATE DEGREE IN INSTITUTIONS OF HIGHER EDUCATION

Length of program	*Number of institutions*
Two academic years (18 months)	11
Two academic years and one summer (20 months)	12
Two academic years and two summers (22 months)	8
Total	31

Table IV indicates the wide variety of associate degrees awarded by the institutions.

TABLE IV
KINDS OF ASSOCIATE DEGREES AWARDED IN NURSING PROGRAMS OFFERED BY INSTITUTIONS OF HIGHER EDUCATION

Degree	*Number of institutions*
Associate in science	11
Associate in applied science	9
Associate in arts	6
Associate in arts in nursing	2
Associate in arts in general nursing	1
Associate in nursing	1
Associate in arts or associate in science	1
Total	31

The cost of tuition for the entire nursing program varies tremendously from one institution to another. Table V gives the range of cost of tuition for the total program within each category according to the type and control.

One two-year public community college reports that students matriculating in nursing do not have to pay tuition. The bulletin specifies that this applies to residents and nonresidents of the state alike. Under the private school category, two schools – one two-year institution and one four-year institution – have higher rates for out-of-state residents.

The bulletin of one four-year public college states that those students registering with honors pay no tuition. It does not say whether this applies to residents only or if it is limited to any one area of the curriculum. If it also applies to out-of-state residents, the range in the category of four-year public institutions would be from no cost to $1,548.

Other costs which are listed by some institutions, but not by all, include: extra general fees which range from $12 to $30 per academic year; health fees, which are sometimes listed separately, run as high as $44 for two years; uniforms, $43 to $150; and books, $50 to $260.

TABLE V
NURSING PROGRAM CHARGES FOR TUITION AND REQUIRED FEES ACCORDING TO INSTITUTIONAL TYPE AND CONTROL FOR THE ACADEMIC YEAR 1967-1968

Control	*Two-year*	*Four-year*
Private		
State resident	In four schools, the range is $700 to $2,400	In four schools, the range is $1,500 to $2,680
Median	$1,288	$2,050
Out-of-state resident	In four schools, the range is $700 to $2,400	In four schools, the range is $1,700 to $2,680
Median	$1,628	$2,450
Public		
State resident	In fifteen schools, the range is no cost to $875 with fourteen of the fifteen under $650 (six have no tuition and one did not list tuition)	In seven schools, the range is: no cost to $856
Median	$355	$630
Out-of-state Resident	In fifteen schools, the range is no cost to $2,130 with ten of the fifteen under $1,250 (one did not list tuition)	In seven schools, the range is $478 to $1,548
Median	$940	$1,410

Nineteen of the thirty-one institutions have dormitories. The twelve which do not are all two-year public colleges. However, various restrictions are placed on the use of dormitories. One unique institution has dormitory rooms available at no charge to nursing students, both state and out-of-state residents alike. The range for room and board per semester or quarter is from no cost to $748. The highest rate is in a four-year public institution. Two institutions indicate that they have dormitories but do not give the rates in their bulletins.

In one school the students enrolled in the nursing program are given a monthly scholarship grant from the city to help defray the cost of transportation to and from the hospitals, books, and miscellaneous expenses. The amount of the grant is not listed. This is the same school which has free tuition for all nursing students as well as free room and board.

Thus, according to the information listed in the catalogs, it is possible to complete an associate degree nursing program for as little as $200 to $300 or for as much as $5,600. Both programs are two academic years in length, and both are accredited by the N.L.N. It must be said that these two programs represent the extremes on a continuum with the majority of programs falling closer to the midpoint. The programs in public colleges usually cost less than those in private institutions.

All but three of the institutions indicate that there are scholarships and loans available. Nineteen schools offer part-time work assistance. Five list part-time work as being available but discourage the nursing students from attempting it because of the demands of their academic schedules.

The entrance requirements of the programs vary as widely as do the other characteristics, as shown in Table VI.

All schools require entrance examinations for every student with one exception: One requires these tests of foreign students only. Five schools use two tests. Table VII lists the various entrance examinations used and the number of schools using each one.

Four of the schools are on the quarter system; the rest are on a semester basis. The total number of hours in the nursing programs averaged 74.26 credit hours with a range of 58 to 109 credit hours. Since one of the characteristics of the associate degree nursing programs is the emphasis given general education, the programs were examined to see what percentage of the total credit hours the nursing credits represented.

Table VIII shows that there is a wide variation in the amount of professional education in the thirty institutions reporting this information. On the average, the four-year institutions have more general education, while the two-year institutions have more professional education.

In order to evaluate in any degree the general education offered in a program, it is necessary to see in what areas the hours of general education fall. Table IX distributes the credit hours of the programs according to the categories found in an N.L.N. publication representing information from thirty institutions. The greatest difference is found in the range of the number of credit hours given for nursing subjects.

TABLE VI
ENTRANCE REQUIREMENTS OF NURSING PROGRAMS LEADING TO AN ASSOCIATE DEGREE, IN INSTITUTIONS OF HIGHER EDUCATION, ACCORDING TO TYPE AND CONTROL FOR THE ACADEMIC YEAR 1967-1968

Requirement	*Public*		*Private*		*Total*
	Two-year	*Four-year*	*Two-year*	*Four-year*	
Age:					
Restricted	3	1	2	1	7
Not restricted	13	6	2	3	24
High school preparation:					
Graduate	4	1	3	3	11
Graduate or general equivalency diploma	11	6	1	1	19
Not specified	1				1
High school courses required or recommended:					
College preparatory	8	6	3	4	21
Laboratory science and mathematics	3	1			4
Laboratory science only	3	1			4
Not specified	2				2

The second greatest difference is found in the last class. All electives which were not designated as being from a particular area were placed in this section. This helped to spread the range in that not all institutions have electives in their nursing programs—only seventeen of the thirty programs have elective credits, and it varies from program to program as to whether the elective credits are to be taken in any particular area. The greatest number of elective hours given is twenty-five. This is in a private, four-year institution which also requires the largest number of total credit hours of any of the nursing programs. The program is two academic years plus two summer sessions in length.

Although time is limited in two-year programs, it is significant that thirteen programs have no elective hours.

The number of science hours runs rather high. Considering the usual time spent in lecture and laboratory, as well as the preparation and study needed in the science areas, it is possible to understand why such programs are not for the less-academically prepared individual.

Courses in social studies frequently include psychology, sociology, and growth and development; courses in the humanities encompass ethics, philosophy, literature, foreign languages, and the fine arts appreciation courses of music and art.

TABLE VII
PRE-ENTRANCE TESTS REQUIRED FOR ADMISSION TO NURSING PROGRAMS LEADING TO AN ASSOCIATE DEGREE, IN INSTITUTIONS OF HIGHER EDUCATION, ACCORDING TO CONTROL AND TYPE FOR THE ACADEMIC YEAR 1967-1968

Test	*Public*		*Private*		*Total*
	Two-year	*Four-year*	*Two-year*	*Four-year*	
American College Test Battery ...	6	3	1		10
College Entrance Examination Boards ...	1	2		3	6
Junior College District Placement Test ...	1				1
National League For Nursing Pre-Nursing and Guidance Test ...	1				1
Nursing Aptitude Test of Psychological Corporation ...	2				2
(Own) School Test ...			1		1
Regents Scholarship Examination ...			1		1
Scholastic Aptitude Test ...	6	2	2	4	14
State University Admission Examination ...	1				1
Total	18	7	5	7	37*

*Six institutions use more than one test.

TABLE VIII
PERCENTAGE OF NURSING CREDITS REPRESENTATIVE OF TOTAL CREDITS IN PROGRAMS LEADING TO AN ASSOCIATE DEGREE, OFFERED BY INSTITUTIONS OF HIGHER EDUCATION, ACCORDING TO CONTROL AND TYPE FOR THE ACADEMIC YEAR 1967-1968

Institution	*Range (per cent)*	*Mean (per cent)*
Public:		
Two-year	41.09 to 67.58	52.12
Four-year	41.02 to 53.00	48.27
Private:		
Two-year	40.62 to 50.66	46.53
Four-year	35.89 to 54.54	43.58
All Programs	35.89 to 67.58	49.37

There is a great deal of variety in tuition costs, entrance requirements, facilities offered, and courses required in nursing programs leading to an associate degree.

Although variety in educational offerings is desirable in order to meet the different needs of students, there must be some consistency which identifies the discipline in general. Criteria which permit wide variations do not give sufficient guidance, especially during this period of tremendous growth in numbers of programs when many qualified and experienced leaders in associate degree nursing programs are so few. If the associate degree programs are to provide large numbers of qualified individuals prepared to give bedside nursing care, the programs must be planned on sound educational principles; they must meet the needs of the nurse both professionally and generally, insofar as it is practicable to do so.

There are limits, of course, in a two-year program. The challenge is to provide, within those limits, a program neither too pretentious and thus unreasonable nor too narrow and thus unduly confining. The associate degree programs have the advantage of being able to select from a wide range of general education offerings, but selections should be made wisely. There should be some room for individual preferences; educational programs must not dictate every course hour.

Those individuals in the associate degree programs in nursing must assume the responsibility for carrying on research projects in their area. If they wish their area to be accepted by others in general, and, if they want this area to make the tremendous contribution to the nation's health of which it is capable, then they must secure the answers to many problems: What should the entrance requirements be? Do restrictive requirements such as high school graduation, certain age limits, and college preparatory courses upgrade the kind of student enrolled at the expense of losing many others with good potential for nursing? If this does occur can we justify this practice in light of the nation's health needs? What does the associate degree program intend for its graduate to develop as a result of the educational program in the way of specific skills, knowledge, and attitudes? What are the expectations of nursing service employers? Are there any differences?

Other questions need investigation: Do the present state board examinations adequately evaluate the graduate of an associate degree program in nursing? If they do not, how should they be changed? How does the performance of the graduate of the non-N.L.N.-accredited school compare with the graduate of the N.L.N.-accredited school, and what are the implications for both schools?

It is time to substitute careful study and analysis for personal beliefs and blind obedience to tradition. The associate degree program represents an important step toward meeting the critical need for nursing care. But we must take care to build a solid foundation for this enterprise or a valuable educational venture will be lost for lack of critical evaluation.

TABLE IX
DISTRIBUTION OF CREDIT HOURS IN NURSING PROGRAMS LEADING TO AN ASSOCIATE DEGREE, OFFERED IN INSTITUTIONS OF HIGHER EDUCATION, ACCORDING TO CONTROL AND TYPE FOR THE ACADEMIC YEAR 1967-1968

	Range of credit hours				*Average credit hours*			
Category	*Public*		*Private*		*Public*		*Private*	
	Two-year	*Four-year*	*Two-year*	*Four-year*	*Two-year*	*Four-year*	*Two-year*	*Four-year*
Nursing	30-50	30-52	26-38	25-36	38.53	37.71	32.50	31.00
Social studies ..	6-15	8-15	9-17	6-18	10.86	11.43	12.75	10.75
Humanities ..	0-9	0-9	0-3	0-9	3.06	4.14	.75*	4.25
Natural sciences	3-16	7-16	9-15	9-17	11.20	11.57	13.25	13.00
Communications	3-12	3-11	6-12	3-10	7.00	6.71	6.75	6.25
Others (includes electives)	1-12	0-22	0-8	0-6	4.20	7.57	4.50	3.50

*Of the four private two-year institutions, only one program has a three-hour course in the humanities. Thus, the average for the four institutions is .75 credit hours for the category "Humanities."

Mental Health Technology Programs: Present and Future*

The rapid expansion in mental health services in recent years has magnified the already acute shortage of professional personnel. There is now increasing awareness that many time-consuming tasks being performed by professional workers could be delegated to qualified persons who have been educationally prepared for an assisting role.

In response to this demand for the training of the subprofessional worker from the mental health institutions the community colleges of the nation became interested in the establishment of such training programs. Historically the community college has been very sensitive to the needs of the community and the area of mental health proved to be no exception.

The first two year program in community colleges began on the Fort Wayne Campus of Purdue University. This two-year curriculum was launched in 1966 to meet the specific mental health needs as viewed by the staff at Purdue University. Since that time a number of community colleges have initiated programs in the area of mental health technology training.

The response to this demand occurred as a direct result of the need to provide semiprofessional personnel to meet patient demands and needs. These needs were unmet and largely ignored, not deliberately, but due specifically to the lack of service personnel to carry out functions and tasks at the local institutions. It was realized at an early date that the increased output of Ph.D. psychologists, M.D. psychiatrists, master's degree psychiatric social workers, and R.N.'s could not fill the crisis demand for mental health workers at a pace rapidly enough to keep up with the current demand much less meet the expanded needs of the institutions nationwide. The response to this demand came from a number of institutions.

Those institutions that responded by establishing programs are: *Amarillo College, Amarillo, Texas; Black Hawk College, Moline, Illinois; Catonsville Community College, Catonsville, Maryland; Central YMCA Community College, Chicago, Illinois; The City Colleges of Chicago (specialized curriculum on specific campuses); Community College of Baltimore, Baltimore, Maryland; Community College of Philadelphia, Philadelphia, Pennsylvania; Daytona Beach Junior College, Daytona Beach, Florida; Essex Community College, Baltimore, Maryland; Jefferson State Junior College, Birmingham, Alabama; Kingsborough Community College, Brooklyn, New York; Metropolitan State College, Denver, Colorado; Miami-Dade Junior College, Miami, Florida; Sandhills Community College, Southern Pines, North Carolina; Sinclair Community College, Dayton, Ohio; Somerset Community College, Somerset, Kentucky; Sullivan Community College, South Fallsburg, New York; Thornton Junior College, Harvey, Illinois.*

Institutions scheduled to begin programs in the summer or fall quarter are: *Western Piedmont Community College, Morganton, North Carolina; Montgomery College, Takoma Park, Maryland; Greenville Technical Educational Institute, Greenville, South Carolina; Borough of Manhattan Community College, New York, New York.*

The need for this type of training program is exemplified by comments made by those individuals on the firing line. Dr. Frank James, superintendent of Cherry Hospital, Goldsboro, North Carolina, has stated in writing and at conferences that the only answer to the current manpower shortage is the training of the subprofessional or middle-level mental health worker to meet the acute needs of the state mental health system, not only the psychiatric hospital but comprehensive mental health centers. "There can be no hope for meeting manpower needs,"

**James L. Moncrief, director, Career Programs, Department of Mental Health, State of North Carolina, Raleigh, North Carolina.*

James continues, "if we rely solely on master's degree level workers. Concurrently we would develop a career ladder baccalaureate program to provide upward mobility for these individuals that we have trained as a two-year technician."

Dr. Robert M. Vidiver, director of education for the Department of Mental Hygiene, State of Maryland, has written numerous articles on the specialized needs and nature of the associate professional worker and has stated that the approach to major problems in the medical-paramedical field is the greater utilization of the middle-level or the associate professional types in the health fields.

However, to effect this we must design appropriate undergraduate curricula and field instruction to prepare such beginning personnel for entry-level positions of higher responsibility. Students enrolled in the mental health programs at Sandhills Community College expressed the concept which is generally found throughout the mental health technology training programs. They were exceptionally pleased with the relatedness of the classroom instruction to the actual clinical requirements. They were being told "like it is" in the classroom phase of their mental health program. There was no hesitation on their part to implement the classroom instruction for it is meaningful and directly related to the activities encountered in the clinical setting.

Students involved in the clinical phase of the Jefferson State Junior College program in Birmingham were quite impressed, however, initially shocked with the problems confronting the mental health worker in the psychiatric setting. They felt that the clinical experience would enable them to cope with problems of similar nature in the future and provide for a more meaningful work role as a result of the detailed and well-programmed clinical supervision and experience. These students were much impressed with the complementary aspects of the academic and clinical practicum. They dove-tailed very nicely, for each complemented the other and provided a more meaningful job experience for them.

Dr. Ralph Simon of the National Institute of Mental Health has expressed his interest through NIMH support of community college training programs. Recently he stated that the future of the associate worker in the field of mental health is very bright for the training programs are quite meaningful, but the individual must realize that he is being trained for skills that a baccalaureate worker or a master's degree worker may not possess. Thus, the associate-level worker is a highly trained individual and can fill many of the roles in our mental health institutions that are yet unforeseen. This is an answer to the current crisis of supplying manpower for the mental health field.

Mr. Ingram Parnley, the director of the Sandhills Community College mental health technology program reported that the students enrolled in this curriculum are above average and the training program thus structured by the institution must provide for high competency skills for these students. The student tends to mature very rapidly and perform services unanticipated at the outset of the program. The clinical portion of the program assisted in this maturation process and the use of "the group" has caused many of the students to become more useful members of the community in addition to a more competent member of the mental health team.

The curriculum for training the mental health technician is not standardized in the sense that there are specifics established for all curriculum; however, many of them share some commonality in a concentration in the field of social sciences as a basic point of departure. However, the curricula offered varies so that in some cases there may be found only three hours of clinical or field experience, with heavy concentration in general education courses and three or four mental health technology courses. Other programs have as many as twelve mental health technology training courses, with 48 credit hours of clinic or field experience. Some programs carry heavy concentration in courses such as English and the biological sciences, while others carry no such courses as part of the required curriculum. In many cases this is taken with the elective credit and incorporated as part of the elective sequence of courses.

The clinical schedules of students enrolled in such a program are many and varied. Basically, one can take the medical and nursing model in which the students are assigned to a specific type of case, as an introductory aspect, and then followed by assignment to individual patients and follow these patients through the entire resocialization and/or treatment activities that he receives in the hospital. On the new geographical unit-type organization of state hospitals this involves all aspects of the mental health treatment team activities. In the unit organization the patient is assigned to a geographic unit with specific services being performed by consultants coming to the unit, thereby altering the system of psychiatric care from the old illness orientation to the treatment of the individual in a geographic unit setting. The occupational therapist is brought in with the nurse, the psychiatric social worker, the psychologist, the psychiatrist. Thus, the patient is no longer assigned to a ward for acute illness, schizophrenia, paranoia, etc.; he is assigned to a specific geographic area unit and then treated with other patients who may have completely unrelated illnesses, and with completely dissimilar problems. Thus, a student assigned to a patient in this setting will receive a broader scope of clinical experience. There are two methods of patient assignments. One is the full-time assignment for a complete quarter of twelve weeks, during which time the student actually works almost an eight-hour day with the patient. This is not comparable to the apprenticeship or guild-type organization. But the student is actually working with the patient. In a sense he becomes a member of the treatment team and follows that patient daily over an extended period of time.

A second method of work assignment is the fragmented daily assignment during which time the student may spend three days a week on the unit with patients, two days in an academic classroom setting or in some other assignment. The student normally is assigned a three- or four-hour block of time during those days of clinical assignment. Or he may be given a full day on the two or three days which he is assigned to the unit and the patient. This would permit the student to work in a multiple assignment situation of which three hours could be assigned to patient A, three hours to patient B, or Tuesday-Thursday assigned to A, and Monday, Wednesday and Friday assigned to B. The advantages of these assignments are debated, and no attempt will be made here to identify the more preferable type of assignment.

These assignments and work schedules are designed for those students working in the psychiatric hospital setting. The student receiving clinical experience in the comprehensive community mental health center will have a different type of assignment. Here the student will work with families on a more prolonged basis than the psychiatric hospital setting, and have more direct contact with the community, and will deal with more varied problems in the setting of the mental health center. Also the student is involved with assignments which of necessity will take more time during the day and the week because of the different types of patients seen and the different services offered such as aftercare and the problems of resocialization while the patient is living in his community. The student is assigned to the role of an observer and then as a participant in the therapeutic team relationship.

Another assignment for the student in this curriculum may be in the areas of social welfare, travelers aid, assistant to school guidance counselors (to serve as a crisis-type counselor when the professional counselor is not available), involvement in mental retardation centers wtih children's educational programs, and in the area of alcoholic rehabilitation. Students can provide invaluable service in assignments to such rehabilitation centers and can receive excellent experience for this in a combination of the hospital and comprehensive mental health center assignments.

The future of mental health technology training programs is extemely bright, and a few trends have been identified. First, the rapid development of technician training programs is a commonly recognized phenomenon, for the beginning of September 1969, will see the number of colleges offering such training programs more than double. This has been brought about by two factors – the community demanding better mental health treatment and by the mental health professionals who have recognized that the need for assistance is quite critical, and this is a means whereby this need can be met. Thus, with pressure coming from the professionals and the community, the community college responded to these sensitive needs and proceeded to launch new training programs for the associate professional.

A basic trend which is not as widely recognized has been the movement from the extremely, highly specialized mental health technology programs to a more generalized, or generalist, approach. This has been evident in individual discussions and conferences, and is documented by a curriculum survey completed in January 1969. Programs which started with highly specialized curricula are now in the process of curriculum revision and are developing new curricula with more concentration in the area of generalized studies in the mental health field.

The obvious reason for this change in training activities stems from the need to fit this person into a broader field than was originally defined for the mental health worker. As pointed out in this article, the trend in mental health treatment has progressed from the illness classification and grouping of patients on wards or units by this method to the geographical unit classification with those workers assigned to a variety of tasks from recreational therapist assistants to a member of the group therapy treatment team. Thus, a person trained in narrow skills, so highly specialized, would not feel comfortable in such a broad role as the new treatment team approach dictates in our current systems. Additionally, the community college can train this mental health worker to serve not only in psychiatric hospitals, which is one phase of employment need, but to function in the comprehensive community health center which is a most valuable addition to the national mental health system.

Outside the mental health system there is an opportunity for this generalist to work as an assistant to the school guidance counselor to provide first-line consultation and referral to the master's degree–level counselor. Under the limited budgets the system is not able to provide a "master counselor" for all of these positions. This would enable the school systems to employ a larger number of associate counselors to guarantee the students and their parents access to a guidance counselor when the need arises.

With the generalist background the student can perform in various Red Feather or United Fund agencies, which in many cases are dependent upon individuals with limited training or who cannot devote a great deal of time to such activities.

With the current manpower shortage in the field of mental health, the need for this type of worker is extremely great. There is, at this point, no danger of flooding the labor force with this graduate, for we envision the retraining of our currently employed aides and technicians through these programs. Hence, they will become a part of the pool of associate degree trained workers.

A statement on the shortage of health manpower does not need repeating and this type of training program for the associate worker offers the most sensible and coherent answer to a complex, chaotic and confusing system of education and training (education composed of in-service programs, limited on-the-job training, and the employment of some individuals with records which at best are questionable). This type of education/training program will at least assure the patient that he is receiving competent care and from an individual who is basically trained as a "people worker," and not a stop-gap employee thrown into the system to fill critical personnel needs on an *ad hoc* basis.

Community College Programs in Mental Health Technology*

People working in the mental health professions are well aware of the manpower shortage which has existed for many years. In mental hospitals, facilities for the mentally retarded, psychiatric clinics, day care centers, halfway houses – in fact, in every type of mental health service, there is a critical lack of mental health personnel at all levels. With the development of community mental health centers and demands for mental health services from such establishments as welfare agencies, correctional institutions, courts, and public schools, the shortage becomes even more acute.

The supply of personnel already falls far short of the demand. As more and more agencies and facilities are established to meet the needs of the mentally ill, the mentally retarded, and others in need of services, new and effective ways must be found to identify, recruit, train and place personnel to do this work.

In his book, *Mental Health Manpower Trends*, written for the Joint Commission on Mental Health and Illness (1960), Dr. George Albee made a strong plea for the development of workers who could be trained in shorter periods of time than the traditional training periods of the existing professions such as psychiatry, clinical psychology, psychiatric social work, and psychiatric nursing, and yet be prepared to do many of the tasks common to all of them.

The objective of this new kind of training is not to prepare a person for independent practice of psychiatry, medicine, psychology, nursing, etc., but rather to develop a "middle-level" mental health worker capable of performing many of the tasks now performed by the professional and in many cases of extending the impact of the professional. This technologist would be a mental health generalist trained to work in a wide variety of mental health services. He would be capable of exercising considerable independence of judgement and action, but would always work under the general direction of an established mental health program.

This new class of mental health worker, then, would develop skill necessary to render services which do not require the individual attention of the highly skilled professional, but which require more skill and knowledge than that of the traditional aide.

Although the need for this mental health technologist has long been recognized, it was not until recently that community junior colleges were given serious consideration as resources for training such workers. In 1965 the National Institute of Mental Health funded an experimental program at the Fort Wayne campus of Purdue University, and a conference for the Southern Regional Education Board in April 1966, to explore further the possibilities for training between community college authorities and mental health professionals. Since that conference, NIMH has funded a small number of other experimental programs, namely at Daytona Beach Junior College in Florida; Metropolitan State College in Denver, Colorado; Sinclair College in Dayton, Ohio; and Jefferson State Junior College in Birmingham, Alabama.

Interest in developing various mental health worker programs is spreading rapidly across the nation, and programs are being inaugurated without waiting for evaluation of the experimental programs. For example, in September 1968, there were nine colleges with mental health technology programs in operation. By September 1969, there will be twenty-seven such programs and according to estimates, by January 1970, as many as fifty-seven programs will be underway.

**Harold L. McPheeters, associate director for mental health training and research, Southern Regional Education Board (SREB), Atlanta, Georgia, and F. Jo Baker, consultant to SREB Community Mental Health Worker Project, Georgia Institute of Technology, Atlanta, Georgia.*

With this kind of booming interest, it is time to take a careful look at some of the existing community college programs, determine trends, and point out some of the cautions that should be kept in mind by persons interested in developing programs in mental health technology.

Most colleges offering programs in mental health technology established a planning committee of educators and local mental health professionals to help them develop a curriculum. In some cases where the members of the planning committee all came from a single agency (i.e., state hospital, community health center, etc.), or a single profession (i.e., nursing or psychology), the curriculum was naturally biased in the pattern of these agencies or specialties. This may be well if it is anticipated that nearly all of the graduates of the program will work in a single agency or with a single discipline. Generally, however, the colleges want to prepare a mental health generalist who can work in a wide variety of mental health settings and with several different disciplines. Since graduates of these programs are expected to possess such versatility, the planning committee should be representative of the various agencies and generally knowledgeable about program activities in mental health and mental retardation.

While most colleges have set out to prepare a mental health generalist, a few have focused on training of specialists in such areas as mental retardation, alcoholism, psychiatric hospital care, or community mental health. Most of the generalist programs have put a heavy emphasis on community work. As such their graduates may resemble the graduates of other programs variously described as social service assistant, community service technician, child care worker, and vocational counseling assistant. While mental health technology programs are generally classed as "health-related," they are equally related to both the health field and the field of social welfare. In a few cases programs in mental health technology are included in the social sciences area of the college.

Examples of the kinds of work settings graduates might be expected to enter are state mental hospitals, psychiatric units of general hospitals, psychiatric clinics, programs for emotionally disturbed children, institutions for the mentally retarded, day care programs, community mental health centers, mental health associations, halfway houses, sheltered workshops, and consultation and education programs. Obviously such a generalist will require a period of in-service training in the specific agency and role in which he is to be employed. He will not be an expert in any single area after his two years of college training.

The mental health field poses a new problem in employing community college-trained workers because most agencies have never used such people and therefore have no budgeted positions or job descriptions for them. Up to now the mental health field has been dominated on the one hand by highly sophisticated professionals and on the other has been heavily weighted with aides who receive only a few months of on-the-job training.

Since the agencies and services will be the marketplace for future graduates, it is especially important that junior colleges considering programs in mental health technology establish good working relationships with state and local mental health agencies and plan with them the kinds of tasks and activities that will be expected of the graduate. Careful foresight and planning will help to assure that jobs at satisfactory salaries will be available to the graduates. This planning cannot be postponed until a few months ahead of the student's graduation day since many public agencies, in order to obtain legislative budget approval, process personnel paper work, etc., must know as much as two years in advance precisely how many positions must be established and at what points in time. A superficial one-time inquiry or questionnaire is far from adequate to determine these needs. A few colleges have neglected this part of the program planning and now find that their graduates are unable to find suitable employment.

Only after there is assurance that budgeted positions at adequate salaries and with adequate career development opportunities and supervision are available for graduates, and after the mental health agencies have clearly specified the kinds of skills they expect the graduates to possess, can there be planning for a specific curriculum. In most of the existing programs the curriculum contains a balance among the four types of offerings:

1. Basic liberal arts courses (English, history, etc.)
2. Basic behavioral science courses (psychology, sociology)
3. Courses in mental health technology
4. Field experience.

Community junior colleges would seem to offer a splendid opportunity for total curriculum development without being hamstrung with traditional departmental autonomy. If the faculties representing these four offerings could plan together toward the objectives of the program, small but significant changes could be made in some of the more traditional courses to make them relate better to each other for the ultimate advantage of the student. For example, a general psychology course might be modified to place less emphasis on physiological and animal behavior and more on clinical and human behavior.

Programs may vary widely in the structure of the curriculum, especially in the fourth category, field experience. In general, program planners have offered students field experience beginning early in the program, feeling that this is extremely important to enable the student to gain experience in working with people throughout the training program. Field experiences provide opportunities for the student to develop some basic skill in interviewing people, to listen and accurately perceive what others are saying, and to understand family relationships. It also enables the student to communicate face-to-face with the client, to be natural and at ease with troubled people, and to establish accurate empathy with the client. Some academicians may consider these objectives too simple for the junior college student; nevertheless, they are basic skills for the human services, just as reading and writing are basic skills for the learned professions, and they are not taught elsewhere in academic programs.

The objectives of the field experience should be well defined. Is the purpose to provide the student with a brief acquaintance with several different settings? Is it to give the student an opportunity to see mental health professionals at work? Is it to provide experience in working with disturbed persons? Or is it to give the student a challenge and opportunity to solve real-life mental health problems under teaching supervision? Will there be a seminar in which several students discuss and share their field experiences? Who will supervise the student in his field work – classroom teachers or agency staff workers? Programs vary greatly depending upon the answers to these questions.

The rationale for including any basic course in the program should be carefully developed. For example, one course that is sometimes (but not always) included is biology. The rationale for including biology often is not firmly established in relation to the goals of the mental health technology program. It is not sufficient to include biology in a mental health program simply because mental health is a health-related field.

The contents of the courses in mental health technology also depend to a considerable extent on the goals of the particular program. Some programs include courses in psychopathology, theories of personality development, treatment and rehabilitative approaches, group process, and behavior modification techniques. Other courses relate to the mental health professions and the institutions concerned with mental disorders and to special problem areas (i.e., children, alcholics, the aged, the mentally retarded). Some courses emphasize developing the student's skill in functioning as a therapeutic agent either individually or in a group situations. Sensitivity training is sometimes a part of the program.

Faculty for the mental health programs generally include from one to three full-time classroom teachers drawn from the different mental health professions. One of these usually serves as the program director. As the programs enroll more students, they require larger faculties, of course. Persons who supervise the field experience may be paid by the college or by the agency. Most programs favor a close relationship between the field work and the college, and joint appointments for agency persons on the faculty of the college are not uncommon. There should be a written agreement between the faculty of the school and the staff of the supervising agency to assure that there is mutual understanding regarding what is expected of the student and what are the responsibilities of the supervisor.

An important part of the program director's responsibility is to assure that provision is made for evaluation of the program, especially since these programs are still in the experimental and developmental stages. Much data is needed about the students who enroll in the programs, information as to age, sex, educational level, and prior experience in mental health is needed, as well as assessments of maturity level, personality traits, etc. Consideration should be given to developing ways to measure progress in knowledge, skill, and maturity of the students.

When students graduate, other questions need to be answered: Where do they go to work? What and how well do they do? What is their salary level? What problems do they encounter? What changes might be made in the program to make training more effective? How do employing agencies rate athe value of the graduate's work? What is the overall cost of the program? What is the cost per student?

Meaningful evaluation requires that complete and detailed records be maintained on each stuent. (The Southern Regional Education Board is developing some guidelines on evaluation.)

Thus far in existing programs, women students far outnumber men. Two populations of women appear to be equally represented – those just graduating from high school, and those in middle life. Ways should be found to recruit more men into the programs.

The number of students in any program is usually small, ranging from ten to thirty. At this time only two programs have graduates. Most of these have been employed in various community agencies rather than in the regular mental health institutions and agencies. With so few graduates in the field, it is much too early to make predictions on where most of them will ultimately find employment. A few programs have attempted to recruit disadvantaged students without much success. It would be helpful to include remediation programs along with, or prior to, the mental health technology course work if disadvantaged students are recruited.

The cost of these programs is not as high as for some other health-related programs, primarily because there is no need for expensive laboratories and equipment. On the other hand, the cost increases if the college pays for the field supervision where the teacher-student ratio is high. The cost also varies with the number of part-time, special faculty employed, such as psychiatrists, clinical psychologists, and the like.

No data are available on student costs, but many students are on stipends or are working part time at nearby mental health institutions or agencies. Many of the students are psychiatric aides who enrolled in the program to improve their performance and upgrade their salaries, especially in the states where career ladders have been developed for persons who want to move up. Some persons have suggested that recruiting psychiatric aides is a good way to begin a new mental health technology program since it provides a group of well-motivated students who already know something about the field and are able to articulate more precisely what they perceive to be their educational needs.

Several of the programs have made special provisions for advanced students to participate in planning the program. These students are encouraged to speak up for what they feel should be in the program, either in course content or in field experience, that might not have been considered in the initial planning.

Based upon reported experiences of existing mental health technology programs, the following guidelines are offered to community colleges interested in developing similar programs. Although adaptations and modifications of the following statements may be necessary to meet unique situations, it is recommended that they be considered. The various steps are numbered for clarity and to indicate the general direction that planning should take. It is understood that several phases of the planning must be carried on simultaneously.

GUIDES FOR PROGRAM PLANNERS

PRELIMINARY STEPS

1. *Appoint a director of the program* whose primary responsibility is to articulate and coordinate the contributions of the community college faculty, the students, various agencies, and other interested parties. To a great extent, the director's skill in interacting with these various individuals in organizing and coordinating their efforts, and in following through on the multiple aspects of implementation will determine the success of the program.

The program director should work closely and continuously with agency supervisors to assure that the work these mental health technicians do is more than just routine aide work, and to assure that opportunities are provided for these persons to move up to positions of greater responsibility and pay. Otherwise, these workers may become locked into dead-end jobs with the inevitable consequences of poor morale and high turnover.

The program director should keep in touch with local four-year colleges to assure that at least a reasonable core of the community college credits is acceptable for transfer to four-year colleges for graduates who aspire to higher levels of academic training.

2. *Appoint an evaluator.* To avoid a possible conflict of interest or contamination of the data, the evaluator, ideally, should not be directly involved in the teaching phases of the program.

The appointment of these two individuals is crucial to the success of the program.

3. *Establish a planning committee.* The composition of this committee may vary depending upon the needs of the particular community in which the graduates are expected to find jobs. As mentioned earlier, it should be representative of all institutions and disciplines involved in the program. (Interested and knowledgeable persons in the general community should not be overlooked. Their enthusiasm and influence can be valuable assets to the program.)

4. *Make a thorough analysis of the surrounding geographical area* to determine the number and types of agencies that might employ mental health workers trained by community colleges. Be liberal in the survey and include all possible agencies, such as hospitals, schools for the retarded, correctional agencies, juvenile courts, children's agencies, various types of clinics, etc.

5. *Contact the key people within each agency.* Include the superintendent or director of each facility, the chief of each discipline, and the administrator of each clinic or service within the agency. Explain to them the general goals of the program and try to involve as many of them as possible in the program. If possible, include them on the planning committee. The probability of developing a successful program is directly related to the degree of commitment and support of the agencies. A strong effort should be made at this time to assure the representatives of each discipline that the program is not being designed to train "junior professionals" but rather to develop a different kind of worker whose skills will supplement those of the professionals.

6. *From these agency representatives, obtain as much information as possible about their needs* and willingness to cooperate in developing the program to train this new type of mental health worker. The following kinds of information will be needed:

a. Their ideas about the tasks and activities that community college-trained mental health workers might carry out

b. The basic knowledge and skills that would be required to fulfill these functons

c. The best method for obtaining the above

d. Attitudes expected of such workers

e. Personality traits desired in such workers

f. The salary such workers might expect to receive

g. Problems anticipated relative to the introduction of such new workers into their agency and suggestions for avoiding or overcoming conficts or problems

h. Degree of commitment to such a training program, specifically: supervision of students, teaching specialty courses at the community college, hiring graduates, assistance in evaluation of the results of the program. It is necessary that both the community collegeand the agency clearly understand the role the agency is expectd to play in the program. Written agreements are desirable. Were agencies have had experience with nursing contracts, thesituation is simplified. Otherwise, progress toward written agements may have to develop in a series of tentative steps.

Some existing programs devoted the first year to laying the groundwork as outline above. Once this was done they found that other steps of program development followed smoothly, including the fial and crucial stage – successful placement of graduates in th field.

DEVELOPMENT OF TRAIING PROGRAM

1. *Goals: Generalist versus specialist:* The mental health health worker will be a specialist in one sense of the word; that is, he will receive a particular type of training that will enable him to work effectively with people who have problems. The degree of specificity is another question. The needs of the particular community should be carefully considered in determining how specialized a program will be. As a general guideline, broad training concepts relating to mental health is desirable. Then the needs of the region as well as the unique

strengths of the individual student should determine the degree and type of specialized training to be undertaken.

2. *Courses:* What is the course designed to do? Specific objectives should be established and documented for each course. Involvement of the total faculty is obviously needed. Efforts should be made to insure that each instructor understands the relevance and the relationship of his particular course to the overall goals of the program. In the basic college courses such as English, biology, etc., which the students take from the general faculty, the problem of relevance becomes more complex. Some program directors have found, however, that members of the general college faculty are eager to cooperate if they understand the objectives of the program.

Consideration should be given to transferability of course credits acquired in the mental health program to other programs in the community college or to programs at a four-year college.

3. *Field experience:* Ideally the student should be exposed to a variety of work situations which provide opportunities for the identification and development of the student's individual strengths and interests. If active communication is maintained between the field supervisors and the community college throughout the training, problems often can be identified early and handled with a minimum of effort. Overall supervision of the student and the integration of his field experience with the academic situation help to provide for his maximum personal growth.

At all times during the training program, the students should be encouraged to ferret out work arrangements that might have been overlooked at the inception of the program. In some instances, novel arrangements discovered by the students have developed into permanent employment.

4. *Faculty:* Experience has shown that clinically oriented rather than academically oriented instructors are more effective in teaching the mental health courses. Wherever feasible, experts from the field should be used. At the present time there are no preferences for any particular discipline of faculty.

The possibility of using graduates of the mental health programs as part of the faculty should not be overlooked. Their training and experience can be valuable.

5. *Students:*

a. Recruitment: Use all possible sources to let potential students know about the program. Radio and television programs, newspaper articles, personal appearances at high schools and civic organizations, and descriptive pamphlets circulated among the college and high school population have been used advantageously. Ways should be sought to reach the disadvantaged.